

The Mining Journal.

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2509.—Vol. LIII.

LONDON, SATURDAY, SEPTEMBER 22, 1883.

WITH SUPPLEMENT. PRICE SIXPENCE BY POST, £1 4s. PER ANNUM

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER AND MINING SHARE DEALER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds, Foreign and Colonial, Railways, Insurance, Assurance, Telegraph, Steamship, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.
Business negotiated in Stocks and Shares not having a general market value.

Every Friday a general and reliable List issued (a copy of which will be forwarded on application), containing closing prices of the week.
MINES INSPECTED.
BANKERS: CITY BANK, LONDON.—SOUTH CORNWALL BANK, ST. AUSTELL.
TELEPHONE NUMBER 1003.

SPECIAL DEALINGS in the following, or part:—
40 Asia Minor, 50 Gunnis (Clit), 25 Panulicillo, £26½.
50 Almada, 10s. 6d., 103 Hington Down, 4s., 50 Prince of Wales, 8s.
20 Bedford Uni., £1 10s., 75 Hoover Hill, 4s. 3d., 80 Pastorena, 3s. 6d.
40 Bratsberg, £2 13s. 9d., 25 Home Mines Trust, 10 Rio Tinto, £21 7s. 6d.
75 Bwlich United, 150 Herodfoot, 3s., 50 Rhodes Reef, 3s. 3d.
20 Carnarvon Cop., 4s., 70 Indian Consol., 3s., 10 Richmond, £8 1s. 3d.
50 Callao Bis, 9s. 3d., 50 Indian Glenrock, 3s., 10 Roman Gravel, 4s.
50 Chile Gold, 13s. 6d., 50 Kapanga, 6s., 20 South Caradon, 10s.
50 Colomblan Hyd., 5s. 9d., 25 Killifreth, £1 13s. 9d., 10 S. Condurrow, £28½.
100 Consolidated, 2s. 3d., 50 Kit Hill, 2s. 6d., 50 South Darren, 12s. 6d.
50 California, 14s. 6d., 75 La Plata, 13s. 6d., 50 S. E. Wynad, 3s.
50 Colorado, £2 3s. 9d., 20 Lead Chance, 2s. 6d., 25 So. Devon Uni., 5s.
50 Canada Copper, 11s., 20 Leadhill, £2 12s. 6d., 100 Sortridge, 1s. 9d.
50 Chontales, 7s., 10 Monna, 4s., 30 South Penstru., 30s.
50 Cor. So. Austr. Cop., 4s., 45 Mounts Bay, 5s. 3d., 50 Tambracherry, 6s. 9d.
50 Devale Moyer, 3s. 6d., 50 Mysore Gold, 4s. 6d., 100 Tanker. Gt. Con., 3s. 6d.
20 Devon Consols, £3½, 75 New Caradon, 4s. 6d., 25 Trevaunance, 7s.
50 Devon Friend., 3s. 9d., 50 New Callao, 5s. 9d., 25 Victoria Gold, 13s.
50 Devon United, 4s., 20 New Emma, £1 11s. 3d., 10 Van, 4s. 6d.
10 Dolcoath, 50 No. Blue Hills, 2s., 25 Wheel Basset, 2s. 6d.
75 Drakewalls, 5s., 25 New Kitty, 2s., 25 West Callao, 15s.
80 East Blue Hills, 5s., 50 No. Herodfoot, 3s., 80 West Devon, 3s. 6d.
20 Eberhardt, 10s., 50 Nouv. Monde, 7s. 6d., 50 West Phoenix, 10s.
50 E. Craven Moor, 25 No Penstruthal, 12s. 6d., 50 West Caradon, 10s.
25 East Lovell, 5s., 20 New W. Caradon, 4s. 9d., 50 West Crebor, 5s.
50 East Wh. Rose, 3s. 9d., 50 Old Shepherds, 8s. 6d., 25 West Polbreen, £1½.
80 Flagstaff, 5s., 50 Oregum, 1s. 3d., 25 West Kitty, £13½.
50 Frongoch, 12s., 50 Organo, 13s. 6d., 50 West Pollice, 5s.
50 Frontino, £1 14s., 50 Orita, 13s. 9d., 50 Wheel Coates, 6s.
25 Goginan, 6s., 25 Potosi, 5s. 6d., 20 Wheel Crebor, £2½.
50 Gold Coast, 15s., 50 Penhall, 6s. 6d., 20 Wheel Jane, 10s.
40 Grogwinlon, 12s., 40 Potosi, 10s., 25 Wheel Jewell, 10s.
25 Guinea Gold Est., 6s. 3d., 80 Port Phillip, 2s. 6d., 20 Wheel Kitty, 27s. 6d.
20 Great Laxey, £16., 70 Parys Copper, 2s., 50 Wynad Persev., 3s.
50 Gawn, 4s. 9d., 30 Phoenix Uni., £2½.

* * SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.
* * SPECIAL BUSINESS at CLOSE PRICES in all Market TIN, COPPER and LEAD SHARES.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

RAILWAYS — SPECIAL BUSINESS.—Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

FOREIGN BONDS — SPECIAL BUSINESS.—Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

AMERICAN AND CANADIAN STOCKS AND SHARES — SPECIAL BUSINESS.
Fortnightly Accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

GOLD AND SILVER MINES — SPECIAL BUSINESS in ALL marketable INDIAN GOLD SHARES, and in California, Callao "Bis," Gold Coast, Guinea Gold Coast, New Callao, West Callao, Tollima A, Tollima B, La Plata, Rio Tinto, Frontino and Bolivia, Potosi, Chile, Nouveau Monde, Ruby, Richmond, Victoria.
* * SHARES IN THE ABOVE SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

IRON AND COAL SHARES — SPECIAL BUSINESS.
Bilbao, Cardiff and Swansea, Consett, Chillington, Ebbw Vale, Nant-y-Glo, Newport Abercrom, and Pelsall.
SHARES SOLD FOR FORWARD DELIVERY, ONE, TWO, OR THREE MONTHS, ON DEPOSIT OF TWENTY PER CENT.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

ELECTRIC LIGHT SHARES — SPECIAL BUSINESS.
Anglo-American, Hammond, Swan, Maxim-Weston.
Shares sold for cash, account, or for forward delivery (one, two, or three months) on deposit of 20 per cent.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

EAST WHEAL ROSE, OLD SHEPHERDS, MOUNTS BAY, TREVAUNANCE, HOME MINES TRUST.
SPECIAL BUSINESS in the above for cash or account.
For SPECIAL SALE, FORWARD DELIVERY, ONE, TWO, OR THREE MONTHS, subject to deposit of TWENTY PER CENT.—100 East Wheal Rose, 9s. 9d.; 100 Mounts Bay, 5s.; 100 Old Shepherds, 8s. 9d.; 100 Trevaunance, 7s. 6d.; 100 Home Mines Trust, 11s. 6d.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.
ESTABLISHED 1842.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,
44, THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.
RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS.
TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.
Accounts opened for the Fortnightly Settlement
A List of Investments free on application.

MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—
100 Almada, 11s., 25 Great Holway, 50 Pen-yr-Osadd, 100 Bratsberg, £2 11s. 3d., 100 Indian Phoenix, 3s. 3d., 150 Port Phillip, 3s., 150 Chontales, 7s., 100 Indian Consolidated, 20 Richmond, £26½, 100 Carn Camborne, 21s., 3s. 3d., 50 Ruby, £1 11s. 3d., 100 Colomblan Hyd., 5s., 50 Kolimoor B, 10s., 15 Roman Gravel, 100 Chile Gold, 14s. 6d., 100 La Plata, 13s. 6d., 30 Leadhill, £2 12s. 6d., 20 Trevaunance, £2½, 75 Callao Bis, 10s., 150 Mysore Gold, 4s., 150 Tankerville, 4s., 20 Devon Consols, £3 3s. 9d., 20 United Trumpet Consols, 25s., 100 Nouveau Monde, 7s. 6d., 100 Nouv. Monde, 7s. 6d., 25 New Kitty, 2s., 25 Orita, 13s., 30 Frontino, £1 14s., 50 Organo, 13s. 9d., 100 Potosi, 5s. 6d., 20 Panulicillo, £26½, 20 Prince of Wales, 8s., 20 East Caradon, 9s., 25 Emma, £1 11s. 3d., 50 Frongoch, 12s., 50 Grogwinlon, 12s., 100 Gold Coast, 15s.

Where prices are not inserted, offers may be made.
SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.
Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.
WILLIAM HENRY BUMPUS, SWORN BROKER,
OFFICES: 44 THREADNEEDLE STREET, LONDON, E.C.
ESTABLISHED 1867.

BRITISH AND FOREIGN MINING OFFICES.

Messrs. PETER WATSON AND CO.,
18, AUSTIN FRIARS,
OLD BROAD STREET, LONDON, E.C.
BANKERS: THE ALLIANCE BANK (Limited).

Messrs. PETER WATSON AND CO.'S
BRITISH AND FOREIGN MONTHLY MINING NEWS
—STOCK AND SHARE INVESTMENT NOTES—MINES,
MINERALS, AND METAL MARKETS—SHARE LIST,
No. 857, Vol. XVII., for SEPTEMBER month, is ready, and will be sent to customers on application.

Annual Subscription..... 5s. | Single Copy..... 6d.

MR. ALFRED E. COOKE,
DEALER IN BRITISH AND FOREIGN STOCKS AND SHARES
OF EVERY DESCRIPTION.
(From 75, Old Broad Street)
ESTABLISHED 1853.
9, OLD BROAD STREET, LONDON.

MINE SHARES FOR SALE.

Mr. ALFRED E. COOKE can SELL the following lots (or any smaller number of shares) to immediate applicants at prices annexed, free of commission:—

Where prices are not inserted, the market price of the day will be taken, or offers may be made:—

15 Bratsberg Cop., £2½, 35 New West Caradon, 20 South Darren Silver-
40 Callao Bis Gold, 10s., 35 New West Caradon, Lead, 10s.
30 Colomblan Hydraulic, 20 South Caradon Cop-
Gold, 5s. 9d., 125 Tanker. Gt. Con., 3s., per 2s. prem.
25 Carn Camborne Tin & 60 New Caradon Copper, 25 Trevaunance, 7s.
Copper, 4s. 3d., 4s. 3d., 50 Nouveau Monde Gold, 7s. 3d.
30 California Gold, 14s. 3d., 80 North Blue Hills, 1s. 6d.
40 Chontales Gold, 6s. 9d., 50 North Grogwinlon, 4s.
50 Drakewalls Tin and 20 Old Shepherds, 8s.
Copper, 4s. 6d., 15 Organo, 13s. 6d., 30 Victoria Gold, 12s. 9d.
30 Devon Friend., 3s. 9d., 50 Orita Gold, 13s. 6d., 20 West Polbreen Tin.
25 East Rose Lead, 8s. 6d., 30 Prince of Wales, 8s., 50 West Gonamena Cop.,
100 E. Blue Hills Tin, 5s., 50 Potosi Gold, 10s., 4s. 6d.
10 Eberhardt Sil., 3s. 9d., 50 Port Phillip Gold, 20 West Kitty Tin, £13½.
10 Frongoch Lead, 12s. 6d., 10 Richmond Sil., £2½, 10 Wheel Crebor Copper,
10 Goginan Lead, 7s. 6d., 25 Ruby, £1½, 4s.
20 Grogwinlon Ld., 11s. 3d., 10 Roman Gravel Lead, 30 W. Devon Cop., 3s.
20 Home Mines Trust, 11s., 10 Sortridge Copper and 30 Wh. Coates Tin, 5s.
40 Herodfoot, 20 Tin, 1s. 6d., 50 West Crebor Copper,
20 La Plata Lead, 13s. 3d., 20 So. Penstruthal Cop., 3s.
10 Leadhill, £2 15s., 20 So. Penstruthal Cop., 3s.
20 Mounts Bay, 5s.

TEN PER CENT. DEPOSIT.—Many of the above shares can be sold for settlement by arrangement at the end of October or November on payment of 10 per cent. deposit. Shares not found in the above list may be purchased on application.

FORWARD DELIVERY.—Mr. ALFRED E. COOKE calls the attention of investors to the fact that he now supplies shares for settlement at end of OCTOBER or NOVEMBER on payment of TEN PER CENT. DEPOSIT.

PRICES of every description of STOCKS and SHARES are received continuously throughout the day by TELEGRAPH from the STOCK EXCHANGE. TELEPHONE NUMBER, 1268.
ALFRED E. COOKE, 9, OLD BROAD STREET, LONDON.
(Opposite the Stock Exchange, with which the offices are in DIRECT TELEGRAPHIC COMMUNICATION.)

MR. JAMES STOCKER, STOCKBROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

Has special business in the following for cash or settlement by arrangement:—
Almada, 10s. 6d., East Caradon, 7s. 6d., Organo, 14s.
Bratsberg, 53s., Frontino, 33s., Prince of Wales, 8s.
California, 14s. 6d., Goginan, £2 1s., Richmond, £2 1s.
Cao Bis, 10s., Home Mines, 11s., Ruby, 25s. 9d.
Carn Camborne, 21s., Isabella, 7s. 6d., Sortridge, 3s.
Chile Gold, 13s. 9d., Kapanga, 4s., South Caradon, 3s. 9d.
La Plata, 13s. 6d., La Plata, 13s. 6d., Tamar, 11s. 6d.
Colomblan, 6s., Orita, 13s. 6d., Trevaunance, 7s. 3d.
Colorado, £2 2s. 6d., Marke Valley, 15s., Tollima A, £25½.
Colliacombe, 10s., Mounts Bay, 5s. 3d., Tollima B, 12s. 6d.
Consolidated, 2s. 6d., Devon Friendship, 3s. 6d., West Caradon, 9s.
Eberhardt, 4s., New Kitty, 3s. 9d., West Crebor, 4s. 9d.
East Blue Hills, 4s. 6d., Nouveau Monde, 6s. 9d., West Kitty, £13½.
East Rose, 8s. 6d., Old Shepherds, 8s. 9d.
20 Mounts Bay, 5s.

BANKERS: LONDON AND WESTMINSTER.
JOHN B. REYNOLDS, STOCK AND SHARE DEALER,
37, WALBROOK, LONDON, E.C.
Established Twenty-five Years.
BANKERS: LONDON JOINT-STOCK.

Mr. REYNOLDS thanks his numerous correspondents for their patronage, and continues to do his best to meet their wishes. They can always rely on bona fide information and prompt settlement of all transactions.
Mr. REYNOLDS is compelled, through pressure of business, however, to charge 21s. for information obtained by those who have not done business with him, and this amount must accompany any letters asking for advice.
Mr. REYNOLDS's remarks will be found on page 1091.
Mr. REYNOLDS thinks that those persons are probably well informed who look forward to a period of increased activity in the Mining Market.

NEW SERIES—DESIRABLE INVESTMENTS.
JOHN LENN AND CO. (LIMITED),
5, GROVER'S HALL COURT, LONDON, E.C.
Are issuing a NEW SERIES of CIRCULARS, giving particulars of most DESIRABLE INVESTMENTS.
Should be read by every investor. Post free on application.
SPECIAL BUSINESS in EAST ROSE and OLD SHEPHERDS Mines shares.

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C. (Established 30 Years)

Can SELL the following SHARES at prices annexed:—
75 Almada, 10s. 6d., 15 Gold Coast, 13s. 6d., 50 South Darren, 9s.
20 Birdseye Ck., £1 10s., 20 Great Holway, £4½, 100 Sortridge Con., 1s. 9d.
15 Bratsberg, £2 13s. 9d., 25 Home Mines Tr., 10s. 3d., 20 South Caradon (Ltd.), 3s. 9d. pm.
30 California Gold, 50 Kapanga, 5s., 25 Tankerville, 3s. 3d.
50 Colomblan Gold, 5s. 6d., 20 Leadhill, £2 12s., 20 Trevaunance, 7s. 6d.
40 Corporation of South, 25 Mounts Bay, 5s., 20 Tollima A, £2.
Australian Copper, 30 Callao Bis, 10s. 6d., 75 Nouveau Monde, 7s., 20 do B.
30 Chile Gold, 13s. 9d., 20 New Emma, £1 11s. 3d., 50 Uni. Mexican, £4 15s.
75 Chontales, 8s. 6d., 40 Organo Gold, 8 Van, £4 15s.
20 Colorado, £2 2s. 6d., 25 Old Shepherds, 8s. 6d., 50 Victoria Gold.
50 Consolidated, 3s., 20 Orita, fully pd., 14s., 50 West Crebor, 4s. 6d.
2 Dolcoath, £67, 20 Orita, fully pd., 14s., 50 West Kitty, £13 15s.
20 Devon Consols, £3½, 10 Panulicillo, £26 8s. 9d., 50 West Phoenix, 3s. 6d.
75 Dev. Friendship, 4s., 100 Port Phillip, 3s., 25 West Caradon, 9s. 6d.
25 East Blue Hills, 5s., 40 Prince of Wales, 8s., 20 Wheel Crebor, £2½.
30 East Caradon, 7s. 6d., 50 Potosi, 10s., 10 Western Andes Gold
40 East Rose, 8s. 9d., 20 Parys Corpora., 2s., 20 Ruby, £1 12s. 6d.
20 Frontino, £1 15s., 5 Richmond, £5 2s. 6d.

VICTORIA GOLD (Venezuela).—I strongly recommend the immediate purchase of these shares for an important rise.
SELECTED, PROGRESSIVE, AND DIVIDEND-PAYING FOREIGN AND COLONIAL MINES.—Circular with full particulars, and table of returns, now ready. Price 1s., free to clients.
PURCHASES FOR FORWARD DELIVERY AT SPECIAL PRICES ON RECEIPT OF DEPOSIT OF 20 PER CENT.
BUYER of Tamar, Carn Camborne, and Colliacombe Consols.
BANKERS: ALLIANCE BANK (Limited).

FERDINAND R. KIRK, STOCKBROKER,
5, BIRCHIN LANE, LONDON, E.C.

Fortnightly Accounts opened in all Stock Exchange Securities on receipt of the usual cover

SPECIAL BUSINESS in the following or any part:—

60 Akankoo, 7s., 50 Frongoch, 12s., 60 Orita, 13s. 3d.
50 Bratsberg, £2 11s. 3d., 50 Goginan, 5s. 6d., 50 Old Shepherds, 7s. 6d.
80 California Gold, 13s., 50 Herodfoot, 3s., 100 Prince of Wales, 8s.
50 Carn Camborne, 21s., 100 Home Mines Trust, 30 Roman Gravel, 4s.
100 Colomblan Hyd., 60 Leadhill, £2½, 50 Trevaunance, 7s.
60 Chontales, 7s., 75 Mounts Bay, 5s., 100 Victoria Gold, 12s.
40 East Wh. Rose, 10s., 40 New Kitty, £2, 40 Wheel Crebor, £2½.
100 Eberhardt, 3s. 6d., 80 Organo, 13s., 80 Wheel Coates.

BANKERS: LONDON AND WESTMINSTER, Lothbury

THE "DIFFERENTIAL" PUMPING ENGINE
(DAVEY'S PATENT).

FOR DRAINING MINES, WATER SUPPLY OF TOWNS, IRRIGATION SUPPLYING DOCKS, PUMPING SEWAGE, and GENERAL PUMPING PURPOSES.

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HATHORN, DAVEY, and Co. have Patterns of "Differential" Engines of all sizes, from 5 to 500-horse power, and have facilities for supplying very powerful Engines and Pumps at a short notice.

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MINING ENGINEER, AND STOCK AND SHARE DEALER,
10, COLEMAN STREET, LONDON, E.C.

Now ready, post free, One Shilling.

SPARE CASH: WHAT SHALL I DO WITH IT?—A New Work for the Guidance of Investors.
Published by ALFRED THOMAS, M.E., 10, Coleman-street, London, E.C.
"Invaluable to those who cannot attend the markets."

ESTABLISHED 1852.

MR. HENRY J. TALLENTIRE
has BUSINESS in all MINING SHARES for cash or payment one or two months on.

OFFICES:—21, THREADNEEDLE STREET, LONDON, E.C.

BANKERS: CITY BANK, Threadneedle-street.

GRANVILLE SHARP, STOCK AND SHARE DEALER,
32, QUEEN VICTORIA STREET, LONDON, E.C.
BANKERS: LONDON AND WESTMINSTER, Lothbury, E.C.

Messrs. ENDEAN AND CO., STOCK AND SHARE DEALERS,
65, GRACECHURCH STREET, LONDON, E.C.
ESTABLISHED 1861.
BANKERS: LONDON AND WESTMINSTER, Lothbury, E.C.

MR. E. J. BARTLETT, STOCK AND SHARE DEALER,
30, GREAT ST. HELENS, LONDON, E.C.
Selected List of Investments post free on application.

ABBOTT, PAGE, NEIL, AND CO., STOCKBROKERS,
42, POULTRY, LONDON, E.C.

MR. J. GRANT MACLEAN,
SHAREBROKER AND IRONBROKER, STIRLING, N.B.
Refers to his Share Market Report on page 1098 of to-day's Journal.

MR. ALEXANDER DAVIDSON,
STOCK AND SHARE DEALER,
LEADENHALL HOUSE, 101, LEADENHALL STREET, LONDON, E.C.

MR. W. B. COBB, 29, BISHOPSGATE STREET,
LONDON, E.C.
Immense Profits and larger Dividends. See Circular, price One Shilling.

JOHN RISLEY, STOCK AND SHARE BROKER,
AND MINING SHARE DEALER,
38, CORNHILL, LONDON, E.C.
ESTABLISHED 1860.

BANKERS: LONDON AND WESTMINSTER, Lothbury, E.C.
J. R. is in a position to BUY or SELL shares in West Caradon and New Caradon Mines free of commission. Prices given on application personally, by letter, or by telegraph.

Messrs. PENNINGTON AND CO., SWORN BROKERS AND SHARE DEALERS,
13, MOORGATE STREET, LONDON, E.C.
BUSINESS in all DESCRIPTIONS of STOCKS, MINING and other SHARES.
ESTABLISHED 1869—BANKERS: ALLIANCE (Limited).

A FULL REPORT, giving present and prospective state of EAST WHEAL ROSE, OLD SHEPHERDS, and TREVAUNANCE, can be obtained on application to—
CHARLES BAWDEN, St. Day, Cornwall.

HORACE J. TAYLOR, 38, GREAT ST. HELENS,
LONDON, E.C., STOCK AND MINING SHARE DEALER.
Offers FOR SALE the undermentioned, all or part, at annexed prices:—

Bedford Uni., £1 8s. 9d., Gunnislake (Clit.), £2, Potosi, 11s.
Bratsberg, £2 14s., Home Mines Tr., 10s. 6d., Prince of Wales, 8s.
California Gold, 13s., Herodfoot, 3s., Sortridge, 1s. 9d.
Callao Bis, 10s., Killifreth, £1½, So. Caradon, 3s. pm.
Chontales, 6s. 6d., Marke Valley, 15s., South Darren, 10s.
Colomblan Hyd., 6s., Monna, 4s., 10s., S. Devon Utd., 5s. 3d.
Devon Consols, £3, Mounts Bay, 5s., Trevaunance, 7s.
Devon Friend., 4s. 3d., North Herodfoot, 3s., West Caradon, 10s.
Drakewalls, 4s. 9d., New Emma, £1 14s. 3d., West Crebor, 4s. 9d.
East Blue Hills, 5s., Nouveau Monde, 7s., West Gonamena, 4s. 6d.
East Caradon, 9s., Old Shepherds, 8s., Wheel Crebor, £2½.
East Wh. Rose, 9s. 6d., Organo, 14s. 6d., Wheel Coates, 7s.
Flagstaff District, 4s., Orita, 14s., Farys, 2s.
Great Holway, £4½, Parys, 2s.

WHEAL OREBOR AND GUNNISLAKE (Clitters).—As foretold by me, the shares have risen considerably since last week, and are still open for a further rise of 100 per cent. Investors would do well to communicate.
BANKERS: CENTRAL BANK OF LONDON (Limited).

MR. GEORGE BUDGE, STOCK AND SHARE DEALER,
9, GRACECHURCH STREET, LONDON, E.C. (Established 30 Years),
Has special business at net prices in the following:—

Bedford United, Grogwinlon, Prince of Wales
Birdseye, Goodvevor, Pen-an-drea
Bratsberg, Guinea Gold Coast, Penhall
California Gold, Gawton, South United
Chontales, Hoover Hill, South Darren
Devon Friendship, Hington Down, Trevaunance
Devon United, Herodfoot, Victoria Gold
Don Pedro, Kapanga, West African Gold
East Caradon, London and Provincial, Fielia
East Wheal Rose, Electric Light, Wheal Coates
Frongoch, New Callao, West Crebor
Goginan, New Kitty, West Pollice
Old Shepherds, West Polbreen
Organo

Registration of New Companies.

The following joint-stock companies have been duly registered:—

THE CANNES-NAPOULE LAND AND BUILDING COMPANY (Limited).—Capital 200,000*l.*, in shares of 10*l.* To purchase an estate situated in the Department of Alpes-Maritimes, France, consisting of 1,920,000 square metres, and carry on the usual business of a land and building company. The subscribers (who take one share each) are—S. Jenkins, 46, Blundell-street; R. J. Thomson, 16, Beveden-street; J. B. Batchelor, 12, Sydney-street; F. Murch, 10, Bardolph-road; J. Chapple, Gravesend; H. W. Miller, 117, Lorimer-road; P. H. Shiers, 21, Cumberland-street.

THE ROCKING FIRE-BAR SYNDICATE (Limited).—Capital 6000*l.*, in shares of 10*l.* To purchase, hire, let, and sell fire-bars, machinery, and apparatus in connection with certain patents. The subscribers (who take one share each) are—G. Shenton, 5, Belsize Crescent; A. J. Lyon, 1, Mining-lane; L. Hopcraft, Palmerston Buildings; A. Helwig, 42, Basinghall-street; F. Bracher, 116, London-wall; M. F. Donner, Balham; C. W. D. Sturgeon, 48, Lincoln's Inn-fields.

THE WESTMINSTER LAND COMPANY (Limited).—Capital 150,000*l.*, in shares of 10*l.* Buying, or otherwise acquiring, improving, developing, and dealing in lands of any tenure, or interests connected therewith. The subscribers (who take one share each) are—Sir C. Clifford, Hatherton Hall; F. C. New, 2, Mandeville-place; Earl of Denbigh, Newnham Paddox; A. J. Blount, 4, King-street; Hon. H. W. Petre, Chelmsford; T. Diaz, 41, Moorgate-street; H. Lantier, 1, Princes-street.

THE ELLIS-CALVES MINING COMPANY (Limited).—Capital 6000*l.*, in shares of 50*l.* To acquire from G. B. Ashburner, W. G. Ashburner, T. Ashburner, and adopt a lease of certain mines, minerals, mining rights, lands, and tenements situated within the parish of Dalton-in-Furness, Lancashire, for the purpose of carrying on the trades of iron ore proprietors, miners, and mining engineers in all their respective branches. The subscribers (who take one share each) are—J. C. Brown, Cleator, iron ore proprietor; W. McCowan, Roseneath, iron smelter; J. Moore, Ulcoats, merchant; J. Vivian, St. Bees, C.E.; W. Pelle, Workington, C.E.; W. Burnyeat, jun., Millgrove, iron ore proprietor; T. L. Banks, 23, Finsbury Circus, architect; J. Hudson, Whitehaven, estate agent; T. Brown, Whitehaven, solicitor. The first six of the foregoing subscribers constitute the first board of directors.

THE SWANSEA DRY DOCKS AND ENGINEERING COMPANY (Limited).—Capital 70,000*l.*, in shares of 50*l.* The construction, maintaining, and working of dry docks, griddons, shipways, sheds, &c. The subscribers are—T. Cory, Swansea, 20; J. Cory, jun., Cardiff, 50; L. Gueret, Cardiff, 50; G. B. Meager, Oystermouth, 50; J. W. Pyman, Cardiff, 50; J. Fry, Penarth, 50; T. E. Watson, Cardiff, 50.

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THE HIVE SHEET IRON COMPANY (Limited).—Capital 15,000*l.*, in shares of 50*l.* To acquire and carry on, at Jarroon-Tyne, a business of manufacturers of sheets and plates of iron, galvanisers of iron and iron goods, &c. The subscribers (who take one share each) are—M. Lunn, Moscow; J. Cheetham, Stalybridge; M. Cheetham, Stalybridge; W. Bridge, Ashton-under-Lyne; M. Fentem, Stalybridge; L. Wartmost, Stalybridge; J. Law, Checkheaton.

CARDIFF RIVET COMPANY (Limited).—Capital 20,000*l.*, in shares of 10*l.* The business of rivet, bolt, and boiler makers, iron founders and smelters, &c. The subscribers are—T. Cory, Swansea, 80; J. Meiner, Swansea, 80; P. Benton, Swansea, 20; R. Frost, Walsall, 15; E. W. Hampton, Swansea, 9; J. Thomas, Swansea, 9; B. B. David, Aberdare, 5.

THE ELECTROLYSIS COMPANY (Limited).—Capital 40,000*l.*, in shares of 50*l.* The business of electric engineers, electrotypers, metallurgists, &c. The subscribers (who take one share each) are—R. Gray, 85, Gracechurch-street; L. Elmore, 51, Queen Victoria-street; C. A. Gregory, 5, Duchess-street; C. F. Jones, 5, Duchess-street; A. Zeehandelaar, Highbury; A. H. Summer, 16, Bury-street; J. J. Shedlock, 40, Bishopsgate-street Within.

THE ANGLO-SPANISH TRADING COMPANY (Limited).—Capital 25,000*l.*, in shares of 5*l.* The business of factors, agents, bankers, warehousemen, millers, shipchangers, dealers in agricultural and mineral produce, &c. The subscribers are—W. Paton, 55, Parliament-street, 10; C. W. Turner, Wandsworth, 10; J. C. Nicol, Camberwell, 10; H. G. Copeland, 2, Billiter Avenue, 15; H. M. Morrison, Manchester, 15; W. C. Marshall, 2, Balfour-road, 1; T. Coomber, Felbridge.

BROWN'S PATENT HEAT-RETAINING PROCESS COMPANY (Limited).—Capital 10,000*l.*, in shares of 1*l.* To acquire, use, and vend certain patents for "improvements in the manufacture of vessels for domestic use, the contents of which are required to be kept at a temperature higher than the atmosphere." The subscribers (who take one share each) are—T. A. Brown, 11, Queen Victoria-street; W. Sapte, jun., 18, Laurence Pountney Hill; W. Webb, Lee; W. F. Nuthall, 40, Barons-court; E. Lloyd, 18, Laurence Pountney Hill; M. Ferrera, Forest Hill; A. Radford, 88, Laurence Pountney Hill.

AMERICAN PATENT LAW—IMPORTANT ELECTRICAL TRIAL.—The patent suit brought by the owners of the Gramme dynamo-electrical machine, to establish their claims to a broad monopoly in the manufacture of these instruments, has at last been brought to final argument before the United States Circuit Court, Newport, R. I. If, says the Scientific American, the patent is sustained, it is supposed that nearly all of the dynamo machines now running will be found to be an infringement—in which case the Gramme owners will make a rich haul. One of the most serious points made against the Gramme patent is that it was patented in Austria prior to the grant of the American patent, which Austrian patent has expired. Under the American law the American patent ceases with the expiration of the previously granted foreign patent for the same inventor; and if this patent has been clearly proven the decision must necessarily be adverse to the validity of the Gramme invention. It is expected that several weeks will elapse before the judgment of the Court will be delivered.

NEW PATENT LAW—PENDING APPLICATIONS.—A very plausible and probably correct interpretation of the 45th Section, concerning which much difference of opinion exists both among inventors and agents, is given by Mr. Thomas Moy in the last number of Engineering. He says:—Under the heading of "Existing Patents," Section 45 (1) runs thus: "The provisions of this Act relating to applications for patents and proceedings thereon shall have effect in respect only of applications made after the commencement of this Act." Now, the result of this is, that if an application is made now, from Sept. 1 to Dec. 31, 1883, the stamp duty upon the petition is, of course, 5*l.*, under the present law. But if the grant of protection should, for some reason, be delayed until January next, it is still treated as an application under the present law, and the above clause is inserted for two reasons—first, to prevent confusion in the treatment of "applications;" and, secondly, to prevent an applicant, whose grant of protection might be delayed until January, from demanding a return of 4*l.* in reduction of duty under the new Act. Then Sub-section 3 enacts—"In all other respects (including the amount and time of payment of fees) this Act shall extend to all patents granted before the commencement of this Act, or on appli-

cation then pending, in substitution for such enactments as would have applied thereto if this Act had not been passed." This relieves present applications from Sept. 1 from the necessity of paying 5*l.* duty on notice to proceed, and the rest of the present high fees, thus reducing the fees from 25*l.* to 8*l.* for the four years. "After Dec. 31 the patents on all existing payments will come under the new law, and any patent which happens to be three years old on Jan. 1 next will just escape the payment of 50*l.*, and the patentee may pay 10*l.* on Dec. 31, 1844, and the other fees as prescribed, and thus keep his patent valid. I cannot account for any misunderstanding of these two clauses having arisen.

THE COAL AND MINERAL DEPOSITS OF INDO-CHINA.

At a time like the present, when so much attention is directed to the operations of the French in Tonquin, special interest attaches to any details concerning the resources of the country. Mr. Charles Smith, Assoc. Inst. C.E., may, therefore, be congratulated on the opportuneness of his admirable abstract of an official report upon the Coal and Mineral Deposits of Indo-China, and Mr. Jas. Forrest, the indefatigable secretary of the Institution of Civil Engineers, should certainly receive equal congratulations upon his admirable choice of papers for insertion in the Excerpt Minutes of Proceedings of the Institution, issued under his editorship. Mr. Charles Smith explains that the French Government mission confided to Messrs. Edmund Fuchs and E. Saladin, and which occupied them from November, 1881, to March, 1882, had for its object the exploration of the fuel-deposits known or believed to exist in Tonquin and in certain parts of Annam, and the study of the metalliferous resources of those countries. They also visited the important deposit of iron ore at Ph'nom Deck, in the province of Compong-Thom, in Cambodia.

About 15 years ago the Chinese discovered outcrops of coal on the borders of the Bay of Ha-Long, and at different points on the eastern coast of Tonquin. A superficial and unmethodical exploration was made to obtain fuel for their gunboats, but the results were not satisfactory; and, as many of the workmen were killed by tigers, the mines were abandoned, with the exception of one place on the Bay of Hon-Gac, which was regularly worked during the winter months. The attention of the French naval officers having been attracted, an examination was made in 1879, and the Jauréguiberry Mine was discovered. This fact, together with reports from the Chargé d'Affaires to the gold mines of Annam, Laos, and Tonquin, the knowledge that numerous coal concessions had been applied for in Tonquin, and that a Chinese company had obtained the concession for a coal mine in Annam, induced the French Government to have an investigation made.

The only road practicable at all seasons to Hué, the capital of Annam, is from the Bay of Chou-May, as, during ten months in the year, a bar prevents the entrance of all vessels to the river on which Hué stands. Its mysterious fortress, the residence of King Tu-Duc, was built in the last century by Colonel Ollivier, and into it no European is allowed entrance. The authors were introduced to the King's minister, accompanied by the French Chargé d'Affaires, who read the ultimatum they had brought from the Governor of Cochinchina, in which France offered her assistance to the King, for the expulsion of the "Black Flags" from the Red River, and fixed the date after which, in case of abstention on the part of the Annamite Government, she reserved to herself the right to accomplish alone the mission, incumbent on her by the treaty of 1874, of opening the Red River to the free navigation of civilised nations.

In examining the geology of the Indo-Chinese peninsula, large areas of ancient schists were found to exist, which the authors assumed to be Silurian, though they were unable to obtain any fossils. Above these is a complex group of schists and sandstones, which they consider to be Devonian, containing deposits, more or less considerable, of red and brown hematites; these rocks also carry veins of auriferous quartz. Carboniferous limestone plays an important part in the geology of Indo-China; it consists of a crystalline semi-marble, generally blackish-grey, occasionally pink or pale lilac, and takes a beautiful polish. Its relative age is determined, not only by its fossils, but also by its stratigraphical position between the last-named rocks and those of the coal formation; but its absolute age is not perfectly clear. The coal measures consist of sandstones and variegated clay-slates; the inferior portion, containing the beds of coal, is characterised by the felspathic nature and predominating grey colour of its sandstones, which are generally micaceous, and present the most complete lithological analogy with the typical carboniferous sandstones of the European basins. Above the coal group occur the true sandstones and variegated clay-slates; the sandstones change to red, losing by degrees their felspar and mica, and becoming exclusively siliceous; the schists are alternately white, red, rose, and green, and they are more argillaceous than in the lower beds, often passing into true claystone. The general aspect of these strata presents the most perfect lithological resemblance to the permian and triassic beds of Europe. The plants found by the authors in the Tonquin coal measures were examined by Mr. Zeiller, who described more than twenty different species. Some are known in Europe, and are characteristic of the Rhetian and Infra-liasian basins of Franconia, the Banat, Scania, the Vosges, and of the Yonne; others are peculiar to India, and are met with in beds (Gondwand system), attributed partly to the Triassic and partly to the Jurassic epochs. Finally, some new species offer great analogies with plants belonging to the base of the Jurassic system. The Tonquin flora forms, in fact, an interesting link between the Upper Triassic, Rhetian, and Lower Jurassic flora of countries so widely separated as India, South Africa, and West Europe. As to the lithology of the beds, the analogies in colour and composition are completed by the adventitious substances they contain, such as copper and salt, with which the upper part of this great formation is impregnated.

Analogous conditions have been observed in the desert of Atacama, where the coal beds of the Terner basin occur amongst felspathic sandstones and brightly-coloured fossiliferous schists, with intercalations and impregnations of salt and copper minerals. The fossils have been determined as Rhetian. Thus in the lithology of the three widely-separated coal series of Western Europe, Chile, and Indo-China there is found a remarkable concordance in the petrological nature of the rocks; whilst also there is a similarity in the relative thicknesses of the different groups, as if the same series of geological phenomena had been produced with equivalent intensities in those three regions.

Many details are given in the memoir as to the Secondary and Tertiary formations, and of the plutonic rocks seen by the authors; but these were all non-metalliferous. They did not succeed in personally investigating the reported deposits of copper and zinc; when visiting the "mountains of zinc," which extended parallel to the coast above Nog-Son, they were unable to find a trace of any mineral whatever, though from specimens they collected, and obtained from the natives, they concluded that copper in that neighbourhood was universally distributed. They endeavoured to visit the antimony mines, near the Chinese frontier, but permission was refused by the "Black Flags," who hold the country, and who murdered the French naval officer, by whom all the eastern delta of Tonquin had been taken possession of in the name of France. They did not ascend the Yellow River high enough to examine the granitic district containing the important tin deposits of Laos and Yun, to which the cost of transport is so great that, at Yun, tin and salt are bartered for equal weights. In consequence of the "Black Flags" the annual quantity of tin now brought to Ha-Noi is only about 1000 tons, against 3000 to 4000 tons previous to 1874.

The auriferous alluvial deposits of Indo-China have for ages been known and worked by the natives. The washing of the alluvial of the great rivers and their tributaries is carried on in a very primitive manner, and the gold obtained forms a considerable proportion of the tributes paid to the different sovereigns. On the Me-Kong, experiments have shown an occasional richness of $\frac{1}{2}$ oz. to $\frac{3}{4}$ oz. of gold per ton; though often the sands are barren, or nearly so. The authors had no appliances to estimate the exact proportions, but in their own experiments in the Mi-Duc district, in the Song-Don, they invariably found gold in their washings. The country

rocks were sandstones and schists, believed to be Devonian, intersected by veins of auriferous quartz, the source of the gold found in the beds of the rivers. Of the specimens of quartz collected and analysed, those taken *in situ* gave nearly $\frac{1}{2}$ oz. to the ton, and boulders about 1 oz., though none showed gold to the eye, or even with a magnifying glass. The authors experienced the greatest difficulties in their explorations from the condition of the country and from the climate.

The coal region of Tonquin, so far as discovered, forms an almost continuous band, parallel to the coast, and about 60 miles in length. Very little is known of the northern portion, all the explorations being to the south. The two districts best known are those of Hon-Gac and Ke-Bao. This Hon-Gac basin extends over an area of six miles by five miles, divided into two portions, with surface drainage into the bays of Hon-Gac and Ha-Long. In the former there is good anchorage in 88 ft. of water; vessels drawing 23 ft. can enter at all tides and in all weathers. A railway, six miles in total length, would suffice to connect the Jauréguiberry, Henriette, and Marguerite Mines with the loading place, the descent in the whole distance being about 100 ft., and there being no difficulty in carrying the line from the mainland to the island.

The coal beds near Hon-Gac are divided by Messrs. Fuchs and Saladin into three groups. The first has four seams, three of these practically forming one bed of 9 feet of workable coal. The second, containing the Marguerite mine, can be traced for two miles at least, with a thickness of coal varying from $6\frac{1}{2}$ ft. to 8 ft., and even more. The third, containing the Jauréguiberry and Henriette mines, is much the most important; its length is at least one-and-a-quarter mile, with beds of which the total workable portions vary from 19 to 40 ft. The second basin, draining into the Bay of Ha-Long, could easily be connected with the Hon-Gac railway with an additional three miles of line. Here there is 24 ft. of workable coal, which by its flora and appearance seems to be allied to the Hon-Gac coal, but it is assumed to belong to a higher geological horizon. For all these beds the authors calculate that there are 920,000 tons of workable coal above the sea level, and 43,500 tons for each metre (3 $\frac{1}{2}$ ft.) in depth below.

The Ke-Bao basin, the most eastern coal formation, covers nearly 49 square miles, and is almost surrounded by the sea, with good anchorage and deep water on one side. There would be no difficulty in making the necessary tramways to the shipping place. There are five beds, their outcrops forming a band about 328 yards in width, or about 131 yards in vertical measurement. Analyses of this coal showed more water and ash than in the other basins; but in depth the quality might improve, as only the outcrops have been examined. Two of the beds may each have a thickness of from 5 to $6\frac{1}{2}$ ft. At Nog-Son, in Annam, a bed of anthracite is worked by a Chinaman. Very little is known of the district. Except in the rainy season, when access is easy, the river is not navigable for boats carrying more than a ton, and the distance from the sea is considerable. The seam is horizontal at the outcrop, and has a thickness of at least $3\frac{1}{2}$ ft., but the quality is inferior, with 19 per cent. of ash; the coal is brilliant, with a conchoidal fracture, and its appearance is similar to that from Pennsylvania. Above the level of the river there may, probably be 2,500,000 tons.

On their return to France the authors made a series of experiments with the bituminous coal, in lumps and briquettes they had raised at, and brought away from, Hon-Gac. The results were very favourable, the coal being considered equal to that from the North of France, though that from the Jauréguiberry Mine contained 20 (sic) per cent. of ash. The other samples were much purer; the Henriette coal having 7.2 per cent. ash; the Marguerite 1 per cent.; the Ha-Long 1.4 per cent., and the Ke-Bao 4.2 to 4.8 per cent.

These deposits may prove to be of enormous value for the supply of fuel to steamships in the Far East. The coal appears to be superior to that from Australia, which is often impure, and to the Japanese lignites, of which there is a great consumption at Hong Kong and Shanghai; whilst at Saigon it would take an equivalent position to the French, whether in the form of lumps or briquettes. In 1880 over 500,000 tons of coal were sold at Singapore, Saigon, Shanghai, and Hong Kong, mainly derived from England and Australia. The authors believe that 100,000 tons per annum could easily be sold in these eastern markets from Tonquin, and that quantity for the next ten years could be obtained from seams above the sea level, whilst there would be no difficulty in obtaining Annamite and Chinese labour to raise that amount.

After completing their investigations in Annam, the authors returned to Saigon, and joined a mission to the King of Cambodia. They went in a gunboat through the network of rivers of Lower Cochinchina to Ph'nom Penh; thence they ascended the main river in a steam-launch to the Great Lake, and on up the river Sene to six miles below Compong-Thom, whence they travelled by buffalo carts to the iron deposits of Ph'nom-Deck. The mine is 43 miles from Compong-Thom, which is accessible for nine months in the year with steam-launches and vessels of light draught. In the rainy season there would be about 18 miles more of water-carriage available, leaving then only 25 miles of land-carriage to the mines, across a perfectly flat swampy plain, to the forest-covered hills, amongst which is Ph'nom-Deck. The rock which contains the iron deposits is a porphyritic tuff, generally of a white or pale rose colour. The neighbouring hills are formed of granitic rocks, of which the most important appears to be a greenish granulate. The alluvial deposits prevented observations as to the relations between the granulate and the tuff. The deposit is very complex in constitution, and contains magnetite, specular iron, red and brown hematite, and carbonate of iron. Curious specimens were also obtained of mixtures of these minerals with the surrounding rocks. The deposits are only worked superficially by the natives, so that nothing is known of them in depth, where probably the brown hematite would diminish, giving place to the carbonate. The three chief varieties that have been noted by travellers are the red hematite, containing up to 68 per cent.; the brown hematite, with about 50 per cent.; and the specular ore, comparable to the Pyrenean ores, with up to 65 per cent. metallic iron. Sulphur is almost, if not altogether absent, and phosphorus is only present to the extent of 0.002 to 0.005 per cent. These ores are, therefore, admirably adapted for the Bessemer and Siemens-Martin processes. The authors believe that the amount of mineral above the level of the plain is not less than 6,000,000 or 7,000,000 of tons, with a mean richness of 50 to 55 per cent. metallic iron; but they were unable to make a thorough examination in consequence of the local difficulties to be encountered, or to search the surrounding hills, which are said to contain other deposits. Still they obtained much valuable geological information, and were deeply impressed with the sight of marvellous monuments of Khmer art, and with grand remains of ancient Cambodian civilisation.

The native Khoyous manufacture a small quantity of extremely pure iron, for which there is a great demand; it is exported to considerable distances, and serves as money over an immense area. A mixture of the ores is used, the chief being a brown hematite, containing under 40 per cent. metallic iron, with over 2 per cent. of manganese, and associated with the surrounding tuff. The metallurgy is divided into two parts: first, the fabrication of an iron-sponge, and, second, the elaboration of the sponge, and its transformation into small hammered bars. The sponge is made in a rectangular furnace, 8 ft. by 3 ft., and 16 in. deep, which is constructed on a mass of earth, nearly 3 ft. above the ground. The walls and base of the furnace consist of refractory earth, mixed with very fine white sand. The charge is about 4 cwt. of mineral, with about 15 bushels of charcoal, in thin alternate layers.

The operation continues slowly for eight hours, the blast being distributed from a great number of bamboo twyers, the bellows, of curious construction, being made of buffalo and deer-skins; afterwards for two to four hours the blast is much stronger. During the operation the slag is frequently removed. The resulting sponge is sold to the native forges to be made into bars, which is accomplished by a laborious and primitive process. The bars are far from being homogeneous, some parts being of a steely character alternating with portions of soft iron. The bars weigh about 1 lb., and sell through Cambodia and Siam at prices attaining the rate of 60*l.* per ton.

The authors believe that the mine could be made accessible by a

tramway of 40 miles, costing not more than 2400*l.* per mile to a point on the river above Compang-Thom, where vessels of light draught could ascend. The climate is bad, and Europeans could not remain above three or four years without a change. The authors consider that a Bessemer steelworks, with blast-furnaces, could be erected with advantage at Saigon, to draw its mineral from Cambodia, and its charcoal fuel from the whole country, whilst the abundant mountain limestone would supply the flux. There should be no difficulty in disposing of 20,000 tons of steel (rails, plates, &c.) at Saigon per annum.

MANUFACTURE OF STEEL.

Manganese has already been frequently employed in the manufacture of steel in proportions varying from 1 to 1½ per cent. or thereabouts, after which it has from past experience been and still is generally believed that any further addition thereof to the metal under treatment is deleterious and injurious and only results in a worthless product, utterly valueless commercially, and consequently any further addition thereof in excess of the proportions mentioned has been considered impracticable; but it occurred to Mr. ROBERT HADFIELD, of Sheffield, that the belief thus generally entertained might be erroneous, and he, therefore, engaged in a long series of experiments and tests with the object of discovering the truth of his surmise. After a considerable expenditure both of time and capital he has at length discovered that by adding the ordinary ferro-manganese of commerce to iron or metal either wholly or to a great extent decarbonised and refined or treated by any of the ordinary processes, or to steel produced by any of such processes in increased proportions sufficient to obtain or produce in the steel or decarbonised iron or metal under treatment a percentage of manganese varying from 7 to 20 per cent. the most beneficial results are obtained. Such percentage is regulated according to the purposes for which the steel is required. For instance, to produce a steel suitable for armour-plates and other similar purposes he adds about 10 per cent. of rich ferro-manganese, containing, say, 80 per cent. of manganese, thus obtaining a steel containing about 10 per cent. of manganese. To produce a steel suitable for railway plant and wheels he adds about 11 per cent. of similar rich ferro-manganese, thus obtaining a steel containing about 11 per cent. of manganese. To produce a steel suitable for steel toys and tools he adds about 12 per cent. of similar rich ferro-manganese, thus obtaining a steel containing about 12 per cent. of manganese.

In carrying out his invention Mr. Hadfield in all cases uses by preference a ferro-manganese containing as high a percentage of manganese as possible; but as low as possible in carbon silicon and other foreign bodies. He takes ferro-manganese, containing, say, 80 per cent. of manganese or upwards in suitable proportions, according to the quality of steel required to be produced, and having first carefully melted the same in a reverberatory, or other furnace, he then pours it into the molten steel under treatment, and thoroughly incorporates the same therewith by well stirring them together until both are perfectly blended in one homogeneous mass. He then runs the same into ingot, or other suitable moulds, and allows it to cool, after which it is ready for use, as it requires neither tempering, rolling, forging, or hardening. This improved treatment of steel in the process of manufacture by employing ferro-manganese in the increased, or other suitable proportions, according to requirements, is entirely novel, and renders the steel so manufactured harder, stronger, denser, and tougher than any steel now manufactured even when forged and rolled.

The advantages claimed for steel manufactured, according to the improved process, are numerous, and of the utmost commercial importance. They are briefly summarised as ensuing:—Freedom from honeycomb and other defects. Great toughness, combined with extreme hardness, whereby the hitherto indispensable processes of rolling, forging, hammering, hardening, and tempering are entirely dispensed with, thus effecting an enormous economy in time, labour, and expense. Thinness and great fluidity, thus enabling fine steel castings to be made without misrunning, and nearly, if not quite, as smooth as metal castings, and a steel that does not settle much, and yet is sound, as although extremely hard it does not draw like ordinary steel castings, particularly at the junction of the thick and thin parts. By the improved process, too, steel and steel castings can be made with unvarying uniformity, regularity, and success from materials, which are easily obtainable. Steel thus manufactured is specially adapted for making steel rolls to replace those made of chilled metal, as also for other castings, such as guns and armour-plates, and for artillery purposes generally, and also for railway and tramway wheels and plant, and for other similar purposes. The larger edged tools and articles known in the trade as steel toys, as also implements and parts of machinery, and other articles too numerous to mention, may be cast therefrom without requiring either forging or tempering, and in the case of large edged tools they are ready for use after grinding. By his improved employment of manganese in the manufacture of steel he obtains an entirely new quality of steel hitherto totally unknown, and far exceeding any steel heretofore in the market. Mr. Hadfield also adds that his improved treatment renders the use of silicon unnecessary in order to obtain soundness.

THE VARLEY ELECTRICAL PATENTS.

Several important inventions connected with the application of electricity are at present being introduced by Messrs. VARLEY, SHEARER, and Co., of Mildmay Park Works, London, and it is understood that the firm are about to bring forward an improved telephone, which is pronounced by a skilled electrician, who has carefully tested it, to be of great excellence. First, the Varley patent carbon candle is claimed to possess advantages over other electrodes in its cheapness, its admitting great sub-division of the arc, its adjustability to any lamp being flexible or rigid as required, its large focal area of arc, and its adaptability to any character of current. In an actual experiment at the Aquarium, one of the Varley carbons was burned as a negative during four hours, when it was found the total consumption was only half an inch. The positive electrode was a hard Carré carbon; but assuming the ordinary ratio to obtain, then the consumption, if burned as a positive, would be two and a half times that of the negative. Taking the sub-divisions per electric horse-power at 50 (nearly 88 sub-divisions were actually obtained) then the cost, even when carried out on a comparatively small scale, would be (for carbons, interest on cost of dynamo and gas-engine and depreciation, cost of gas for engine, and cost of attendance) per hour for 50 lamps of 100-candle power each would be 4*d.*; whilst to give the same amount of illumination with gas would require 2500 cubic ft. of gas, and (at 3*s.* per 1000 cubic ft.) would cost 7*s.* 6*d.*

By this candle, subdivision has, it is said, been carried to a degree hitherto unapproached. Experiments carried out at the Aquarium in the presence of several electrical engineers with 10 of these candles arranged in a series, gave equal to 87,776 sub-divisions per electrical horse-power. By no other system of arc lighting have more than about three sub-divisions been obtained, and nearly all systems require 1-horse power per lamp. In its rigid form the carbon can be burned in any of the lamps at present in use. Its flexibility, however, offers an advantage not to be found elsewhere. It can be made in coils of any length and wound round a drum, to be paid out as required. Each coil being of uniform diameter and carbonised at the same time is of uniform resistance throughout, a condition difficult of attainment by ordinary methods, on account of the unreliability of pyrometrical measurements at such high temperatures.

The advantage of having a large point of illumination is obvious. The appearance of the light, too, owing, in some measure, to the abundance of light-giving rays, is totally different from the cold, ghastly appearance of the ordinary arc; in fact, it is described as rich, warm, and sun-like, and under the spectroscopic shows distinctly the hydrogen bands. The light is obtained from the arc itself, there being no apparent cap and cone as in all other systems, and the length of the arc can be varied at will from the point of contact to from 2 to 3 in., according to the strength of the current, without appreciable variation in the quantity or intensity of the light. The importance of this in obviating the necessity for de-

licacy of adjustment in the lamps is unquestionable, where, when extensively used, the greater part of the work must be performed by unskilled servants. It is well-known that arc systems require currents of high potential, and incandescent systems the reverse, and the failure of most of the electric lighting up till now is no doubt mainly due to this difference, the arc system only being suitable for large areas, and the incandescent system being suitable for domestic lighting only. A system to pay must accommodate itself to the requirements of small as well as large areas; in other words, house and street lighting must be done by the same machinery through the same leads, without permutation of the current, which means loss.

The Varley patent accumulator consists of elements made of lengths of cotton driving band or other woven fibrous material. These are generally rolled in volute form, and put through the same processes as in the case of the carbon candle, the area of surface thus presented by the carbonised fibres is enormous. "The cells of the accumulators are charged with a saturated solution of two-parts of sulphate of zinc, and one part of sulphate of manganese, with a small quantity of sulphate of mercury to prevent local action on the deposited zinc. In charging the storage battery, metallic zinc is deposited on one carbon pole, and binoxide of manganese in electrical continuity on the other; the latter, when in use, becomes the hydrogen absorbing pole, whilst the former absorbs the oxygen; in fact, a zinc and carbon battery is formed with increased potential." The zinc and the liquid being the only elements of a heavy character, the smallness of weight in comparison to the lead accumulators must be apparent, and as 1000 square feet of accumulative surface can easily be given in one continuous plate in coil form, its smallness of bulk, as well as immense storage capacity, must be equally obvious.

It has long been known that a certain amount of current would transfer electrically a certain amount of metal from one electrode to another, and several attempts have been made to get a meter founded on this action of the electric current. A notable case is that of the Edison meter. But it never before seems to have occurred to any inventor to combine with this the principle of the hydrometer previous to the introduction of the Varley steam meter. The quantity meter is, in fact, an hydrometer having an electrode below the bulb, and another attached to the cell graduated to record on the flotation line in rising and falling, as the case may be, the amount of current that has passed. If, for instance, for three months the metal has been charged on the bulb electrode, the hydrometer will have sunk in proportion; then, if the current be reversed during the next three months, the rising scale will indicate the electrical equivalent of the amount of metal discharged from the bulb. Of course, as seen in use, there is a dial-plate indicating in tens, hundreds, &c., the amount of current that has passed, and various other forms of record, but the hydrometer is the motive-power of all forms of recording mechanism.

THE DIAMOND FIELDS AND MINES OF KIMBERLEY, SOUTH AFRICA—No. I.

For some time past the price of diamonds has been so unceasingly declining that many have entertained the idea that diamond mining as an industry was doomed to be banished entirely from South Africa; but within the last few weeks a decidedly improved feeling has manifested itself, and holders of the precious mineral are now beginning to express full confidence that with the returning activity of autumn South African diamonds will become as saleable as ever, not indeed at the high prices which once ruled, but at a figure that will amply repay those engaged in mining them. Diamond mining in South Africa was at its zenith in 1881; but the subsequent slight decline is fully accounted for by the mining difficulties—slip of sides of mine and the like, which have been duly reported in the *Mining Journal*—with which the claimholders have had to contend. It has frequently been remarked that a great proportion of the diamonds found in Griqualand West have been sent to Europe through the Kimberley Post-office, where the packages have been registered, and where the average weight of the materials in which the gems were packed has been more or less accurately ascertained. Official returns give the estimated value of the diamonds thus exported at 1,807,532*l.* for 1876, and at 2,112,427*l.* for the following year. In 1878 the figure was 2,672,744*l.*, and in 1879 there was a further increase to 2,846,631*l.* In 1880 the improvement continued, the figure being 3,367,897*l.*; but, as already stated, the great year was 1881, when the output reached 4,176,202*l.* The decline commenced in 1882, the output falling to 3,392,502*l.*; but still it sufficed to raise the total for the seven years to the very respectable figure of 20,975,935*l.*

Similar returns, commencing with the year 1872, give the estimated value of the diamonds exported through the Kimberley Post-office during the eleven years ending with 1882 at 25,299,151*l.*; add the declared value of the diamonds exported through the Custom Houses since 1868—923,126*l.*—and the result gives a total of 26,222,277*l.*, exclusive of the value (known to be very considerable) of the diamonds exported privately or on the persons of passengers leaving the colony. Since the passing of the Diamond Trade Act, 1882, which provides for the registration of diamonds, more accurate statistics have been obtained. This Act took effect in September, 1882, and, in spite of all the difficulties mining companies have had to encounter, the yield during the seven months from September, 1882, to March, 1883, inclusive, was for purposes of registration, valued at 1,892,778*l.*, or at 3,244,762*l.* per annum. During those seven months the public revenue derived from diamonds amounted to 17,787*l.* The serious fall of reef in the Kimberley Mine has, no doubt, retarded the progress of the diamond trade for a time; but information gathered from the best sources justifies the conclusion that the mine shows no diminution whatever in its yield. It is, moreover, gratifying to know that the Diamond Trade Act, with its special powers for the detection and punishment of illicit dealing, and its provisions for the registration of diamonds, has materially tended to protect this source of wealth. The figures already given show the diamonds exported during the five years from 1873 to 1877 to have been of the estimated value of 7,711,358*l.*, and from 1878 to 1882 of the estimated value of 16,275,758*l.* The second quinquennial period, therefore, produced more than double the quantity yielded during the first.

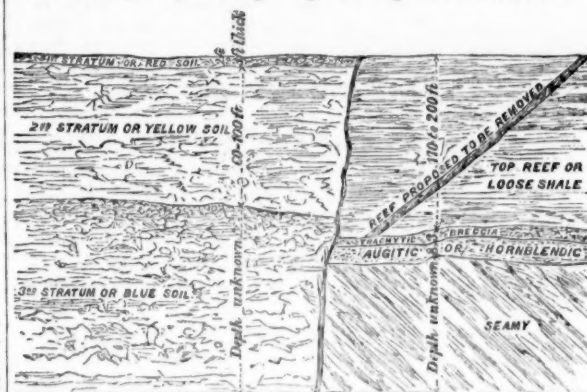
In view of the approaching revival of the diamond mining industry, for which the assistance of British capital will doubtless be called into requisition, the paper recently read before the Institution of Civil Engineers by Mr. J. N. Paxman, A.M.I.C.E., is of considerable interest, and an abstract of it will be generally acceptable. Kimberley, in Griqualand West, is about 700 miles north of Table Bay, and about 450 miles inland from Port Elizabeth and Natal on the east coast. A railway is open from Table Bay to Beaufort West, which is about half-way to Kimberley, the line being in course of construction for the remaining distance. There is also a railway about 220 miles long from Port Elizabeth to Graaf Reinet. The distance by coach road over open country from Beaufort West to Kimberley is a little over 300 miles, and from Graaf Reinet about 230 miles, the journey from Beaufort West occupying from five to ten days, according to the state of the road, and from Graaf Reinet three to six days. The principal mines in Griqualand are—Kimberley, De Beer's, Dutoitspan, and Bultfontein. Besides these there are a few others, which at present have not been sufficiently tested to hold out a hope of their being rich enough to be profitably worked. The Kimberley and De Beer's Mines are about one mile apart, on Government property. The other two, Dutoitspan and Bultfontein, are about 2½ miles distant from Kimberley in a southerly direction, and contiguous to each other; De Beer's Mine is between Dutoitspan and Kimberley. There are two other mines in the Orange Free State—Jagersfontein and Koffyfontein. The first of these produces remarkably fine white stones. These mines are all open, and are worked from the top; the deepest and most regular is the Kimberley. The next deepest is De Beer's, which is uneven; then follows Dutoitspan and Bultfontein. The largest of the mines in Griqualand is Dutoitspan. It is next in importance to Kimberley.

By the end of 1868 many enterprising colonists had pushed their way up the Vaal river, where it was understood diamonds had been found. It was not until some considerable time after that any dig-

ging for diamonds took place, as the colonists at first contented themselves with employing natives to search among the top gravel on the river banks. One of a party, however, who had been a gold-digger in California and Australia, suggested sinking a shaft. This turned out a failure, and recourse was had to the plan of cradling, which was carried on successfully upon both banks of the river. The centre of the river diggings on the Transvaal side was Klipdrift; on the opposite side Pniel, the distance between these two centres being about 1800 yards. The diamonds were found in the gravel which was dug out between boulders, and carried to the waterside and washed. Only the surface gravel was worked in these places, which were then abandoned and others tried lower down. There were in all 14 river diggings. Before the close of 1870 the camps were swarming with people. Houses and stores were erected of canvas and galvanised iron, and large towns arose on each side of the river.

News arrived that diamonds had been discovered on a farm called Dorstfontein, now named Dutoitspan, and on another farm called Bultfontein, about 24 miles distant from the diggings on the Vaal river, and between that and the Modder river. As diamonds were found there in great numbers the diggers rushed to these places and took possession of them, in spite of all the proprietors could do to prevent them. Early in 1871 De Beer's Mine was discovered, and in July of the same year Kimberley Mine. New rushes were made, and many diamonds were found near the surface. In 1872 Mr. Spaldings great diamond of 282½ carats was found at one of the small river diggings.

The plan of the Kimberley Mine was published in the *Mining Journal* of June 2, and Mr. Paxman remarks very truly that these mines are of irregular shape, each mine being surrounded by reef. It is only within this reef that diamonds are found. In 1882 the area of the surface of Kimberley Mine was 20 acres 2 rods 24 poles. Its diameter from east to west was 1100 ft., and from north to south 1020 ft. The area of the surface of the claims was 9 acres 1 rod 6 poles, and there were 420 claims of 961 square ft. each. A section indicating the formation of the soil of the mine and the reef is shown in the subjoined engraving. The top reef is a loose shale



varying in depth from 170 to 200 ft.; it has given great trouble from the frequent slips which occur in it. Below this lie 3 ft. of trachytic breccia, then 8 ft. of compact augitic or hornblendic, and below this it is seamy to an unknown depth, assimilating to basaltic trap, running down almost vertically but slightly inwards. It is believed that the strata underlying the shale are sufficiently strong to withstand the outside pressure; if so, the diamantiferous soil can be extracted without fear of further slips, after the top shale on the edge of the mine has been removed to an angle of 45°. Within the reef, the surface soil, to a depth of 2 or 3 ft. at Kimberley and at most other mines, was of a red colour and sandy nature, resembling the well-known Mansfield moulding sand. At Kimberley Mine the finds in this were particularly good. The next stratum, varying in depth from 60 to 100 ft., is of the nature of a loose yellow gravelly lime, being in some parts rich in diamonds. The third is the real diamantiferous stratum, and called from its colour the "blue." It is of a nature similar to slate, but more easily worked, getting slightly harder as the depth increases. It is less brittle than slate, and more tough and soapy in character. In appearance and substance it resembles dried pipe-clay, though rather darker in colour. Up to the present the thickness of the "blue" stratum has not been ascertained, although in Kimberley Mine it has been worked to a depth of 420 ft., and has been bored into some 200 ft. beyond this depth without any signs of reaching the bottom. In the "yellow" some large stones were found, but generally the working of this bed does not pay, the finds varying in value from 1*s.* 6*d.* to 3*s.* per load of 16 cubic ft. This applies to Dutoitspan and Bultfontein Mines, and to the soil near the surface, a considerable portion of which does not even yield the above value, and is, therefore, not put through the wash-mill. The yield increases somewhat with the depth; but, on the whole, the above sums are not sufficient to cover the entire cost of working.

ELEVATED RAILWAYS.—The elevated railways of New York constitute, says Mr. W. E. ADAMS, in *Our American Cousins* (London: Walter Scott, Paternoster-square), one of the most striking features of that remarkable city. Metal pillars erected at the edge of the pavement, or in the centre of broad avenues, and standing some 20 ft. high, support the lines along which passenger trains are driven at intervals of five or six minutes. The long, straight streets of the city are, of course, peculiarly suited for this strange mode of locomotion. Passengers who use it can look down on to the heads of the passengers below, or into the sitting-rooms and bed-rooms of the houses they are passing. Access to the numerous stations is obtained by flights of iron steps at the corners of the streets. A uniform rate is charged for a single ride, whatever the distance travelled; but that rate is doubled after a certain hour at night. Delay in the collection of tickets is avoided by a simple contrivance. When the passenger has purchased his ticket, he is directed to deposit it in a box provided for the purpose near the entrance-gate of the platform. There is a conductor to each car, who immediately the train starts calls out the name of the next stopping place; hence no time is lost in discharging or receiving passengers. As the elevated railway extends the whole length of the city, some seven or eight miles on each side of it, the accommodation afforded is necessarily immense; but the appearance of the thoroughfares through which the lines pass has been sadly marred. Some streets, where junctions are formed, look more like tunnels than streets. Worse than all, the company has been allowed to cross the Battery Park, ruining, as the *New York Herald* has remarked, "the most beautiful waterside park in the world." Strange things are done in New York. One of the strangest was that of granting permission to the proprietors of the elevated railway to erect a nuisance in front of the houses and shops of the citizens without granting them one farthing of compensation for the injury done to their property.

UTILISATION OF SLAG.—Artificial flags and stone work of various descriptions for fire-proof and other purposes are produced according to the invention of Mr. ROBERT STONE, of King William-street, by using ground flint, marble chippings, spar, or any other hard stone, and agglomerating it with suitable cement. To produce fire-proof stones or material he uses ground fire-proof stone or fire-clay or other indestructible material mixed with molten slag or soon as it runs from the furnace the material will act better if highly roasted before blended with the molten slag or metal, then run into dies and moulds as aforesaid, and pressed while in a partially soft state. When smelting the slag or iron he uses a powerful column of under or over blast for smelting or burning; by this mode of treating slag direct from the furnace and introducing this novel method of mixing and introducing indestructible materials with the liquid slag or metal he can produce at little or no expense most valuable materials for fire-proof stoneware and other purposes.

When pulverising the materials he uses his patent corrugated roll or grinding machines, and may also roll in flags, &c., by a to and fro rolling action, or may force the material through dies of a diminished shape to cause pressure force worked by the action of a screw or a ram by eccentric, or can also in producing fire-proof materials without molten slag he may use a portion of fire-clay mixed in proper proportion with river mud; both those materials combined when highly burnt will stand a much stronger heat in use than ordinary fire-clay of itself. In using the screw, leverage, or hydraulic power on the partially soft material operated on if left on for about six to twelve hours will make the material more consolidated; when artificial stone is required to put into immediate use he roasts the material or boils the water, which produces immediate contraction.

PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Messrs. ABBOTT and WICKETT, stock and share broker Redruth (Sept. 20), write:—Business in shares continues very restricted. A few transactions in Dolcoath, East Pools, West Kitty, Tincroft, and Gunnislake (Clitters). The market closes firm at quotations. An advance in the tin standard is expected shortly. Closing quotations here: Blue Hills, $\frac{1}{2}$ to $\frac{3}{4}$; Camborne Vean, $\frac{1}{2}$ to $\frac{3}{4}$; Carn Brea, $\frac{1}{2}$ to $\frac{3}{4}$; Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; Dolcoath, $\frac{1}{2}$ to $\frac{3}{4}$; East Pool, $\frac{1}{2}$ to $\frac{3}{4}$; Killfret, $\frac{1}{2}$ to $\frac{3}{4}$; New Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; New Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; New Trumpet, $\frac{1}{2}$ to $\frac{3}{4}$; Pedn-an-drea, $\frac{1}{2}$ to $\frac{3}{4}$; South Condurow, $\frac{1}{2}$ to $\frac{3}{4}$; South Crofty, $\frac{1}{2}$ to $\frac{3}{4}$; Tincroft, $\frac{1}{2}$ to $\frac{3}{4}$; West Basset, $\frac{1}{2}$ to $\frac{3}{4}$; West Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; West Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; West Poles, $\frac{1}{2}$ to $\frac{3}{4}$; West Seton, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Agar, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Basset, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Grenville, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Uny, $\frac{1}{2}$ to $\frac{3}{4}$.

—Mr. S. J. DAVEY, mine shareholder, Redruth (Sept. 20), writes:—The share market is inactive, and very little has been done during the past week. Prices of most shares are about the same as reported last week. Subjoined are the closing quotations:—Carn Brea, $\frac{1}{2}$ to $\frac{3}{4}$; Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; Dolcoath, $\frac{1}{2}$ to $\frac{3}{4}$; East Pool, $\frac{1}{2}$ to $\frac{3}{4}$; Killfret, $\frac{1}{2}$ to $\frac{3}{4}$; New Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; New Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; New Trumpet, $\frac{1}{2}$ to $\frac{3}{4}$; Pedn-an-drea, $\frac{1}{2}$ to $\frac{3}{4}$; South Condurow, $\frac{1}{2}$ to $\frac{3}{4}$; South Crofty, $\frac{1}{2}$ to $\frac{3}{4}$; Tincroft, $\frac{1}{2}$ to $\frac{3}{4}$; West Basset, $\frac{1}{2}$ to $\frac{3}{4}$; West Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; West Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; West Poles, $\frac{1}{2}$ to $\frac{3}{4}$; West Seton, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Agar, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Basset, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Grenville, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Uny, $\frac{1}{2}$ to $\frac{3}{4}$.

—Mr. M. W. BAWDEN, Liskeard (Sept. 20), writes:—The mining market continues dull and inactive. Gunnislake (Clitters) advanced $\frac{1}{2}$ on an improvement at the mine. Subjoined are the closing quotations:—Bedford United, $\frac{1}{2}$ to $\frac{3}{4}$; Carn Brea, $\frac{1}{2}$ to $\frac{3}{4}$; Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; Dolcoath, $\frac{1}{2}$ to $\frac{3}{4}$; East Pool, $\frac{1}{2}$ to $\frac{3}{4}$; Killfret, $\frac{1}{2}$ to $\frac{3}{4}$; New Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; New Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; New Trumpet, $\frac{1}{2}$ to $\frac{3}{4}$; Pedn-an-drea, $\frac{1}{2}$ to $\frac{3}{4}$; South Condurow, $\frac{1}{2}$ to $\frac{3}{4}$; South Crofty, $\frac{1}{2}$ to $\frac{3}{4}$; Tincroft, $\frac{1}{2}$ to $\frac{3}{4}$; West Basset, $\frac{1}{2}$ to $\frac{3}{4}$; West Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; West Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; West Poles, $\frac{1}{2}$ to $\frac{3}{4}$; West Seton, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Agar, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Basset, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Grenville, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Uny, $\frac{1}{2}$ to $\frac{3}{4}$.

—Mr. JOHN CARTER, mine shareholder, Camborne (Sept. 20), writes:—There has been very little doing in the share market during the week, and there are very few changes in prices. No alteration in the tin standard. Subjoined are the closing quotations:—Carn Brea, $\frac{1}{2}$ to $\frac{3}{4}$; Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; Dolcoath, $\frac{1}{2}$ to $\frac{3}{4}$; East Pool, $\frac{1}{2}$ to $\frac{3}{4}$; Killfret, $\frac{1}{2}$ to $\frac{3}{4}$; New Cook's Kitchen, $\frac{1}{2}$ to $\frac{3}{4}$; New Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; New Trumpet, $\frac{1}{2}$ to $\frac{3}{4}$; Pedn-an-drea, $\frac{1}{2}$ to $\frac{3}{4}$; South Condurow, $\frac{1}{2}$ to $\frac{3}{4}$; South Crofty, $\frac{1}{2}$ to $\frac{3}{4}$; Tincroft, $\frac{1}{2}$ to $\frac{3}{4}$; West Basset, $\frac{1}{2}$ to $\frac{3}{4}$; West Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; West Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; West Poles, $\frac{1}{2}$ to $\frac{3}{4}$; West Seton, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Agar, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Basset, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Grenville, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Kitty, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Peavor, $\frac{1}{2}$ to $\frac{3}{4}$; Wheal Uny, $\frac{1}{2}$ to $\frac{3}{4}$.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, share-brokers, Queen's Chambers, Market-street (Sept. 20) write:—The cheapness of money and the favourable weather have resulted in a strength being exhibited on the stock markets, and in most cases induced higher figures; the latter influence being withdrawn by the return of rain, prices have to-day fallen away a little from the highest points reached, but the balance on the week is yet favourable on the whole. Foreign stocks, doubtless on signs that the Franco-Chinese difficulty will be arranged without hostilities, show an all round advance, none, however, excepting Argentine being very decided. Spanish alone are lower, and that the merest fraction. Mexican railway stock, as for some weeks past, has attracted most attention for one particular stock, and fluctuations have again been severe, though nothing approaching the wide leaps and bounds of last week. Compared with last Thursday's price they are about $\frac{1}{2}$ lower, after showing well in advance for the greater part of the week, the fall occurring partly in anticipation and partly on the announcement of the traffic return reporting a decrease of 4000. A moderate business is going on in the miscellaneous series of investments; prices, however, rule lower in the majority of instances where change is made, still the total of the alterations is not large.

BANKS record a fair number of transactions at figures showing little or no deviation from recent markings, and beyond an advance in buyers' bids of $\frac{1}{4}$ each in Manchester and County and Manchester and Liverpool Districts, the only changes in quotations are—Higher: Consolidated, $\frac{1}{4}$ to $\frac{1}{2}$.—Lower: Liverpool Commercial, $\frac{1}{4}$.

INSURANCE.—Nothing doing except in Lancashire, Thames and Mersey, and Maritime, the latter two producing only isolated transactions. Prices again lower all round where changed at all. Positive Life at 2s. 6d. to 3s. 6d. show buyers down $\frac{1}{4}$, sellers unaltered.—Lower: Liverpool and London and Globe, $\frac{1}{4}$ to $\frac{1}{2}$; Royal Liverpool, $\frac{1}{4}$; Thames and Mersey Marine, $\frac{1}{4}$ to $\frac{1}{2}$; Lancashire, $\frac{1}{4}$ to $\frac{1}{2}$; and Sea, $\frac{1}{4}$ to $\frac{1}{2}$.

COAL, IRON, & C.—Business reported very meagre. Balance of alterations in prices again adverse, only Canadian Copper and Sulphur marking a rise (1s. per share); whilst A. Knowles is $\frac{1}{4}$; Ebb Vale, $\frac{1}{4}$; Chillington Iron, $\frac{1}{4}$; Pannell's Copper, $\frac{1}{4}$; and Tharish Sulphur and Copper, $\frac{1}{4}$ lower.

COTTON & SPINNING.—Cotton, as usual, rule dull, though not so stagnant as when we last wrote, a better feeling being evinced last Tuesday, the cause of the beneficial change being, however, far to seek.

TELEGRAPHS very quiet, and the only changes being fall of $\frac{1}{4}$ each in Anglo-Deffered and Preferred.

TELEPHONES.—Little doing. Uniteds, $\frac{1}{4}$ higher; Lancashire and Cheshire Old, 6d. to 9d.; and ditto New, 3d. lower.

CORPORATION STOCKS.—Manchester Stock and Leeds Debentures $\frac{1}{4}$ each better.—MISCELLANEOUS.—Hudson's Bay $\frac{1}{4}$ down on the week on balance after fluctuations.

RAILWAYS.—The continued ease in the Money Market, assisted by the opportunity for harvest work given by the improved weather has tended to strengthen prices. Traffic of the week are generally good, excepting that of the Great Northern, which was a decrease, and which adversely affected their A stock. Business has gone quiet again, and with this condition the maintenance of values is somewhat surprising. Caledonians and North British, with dividends about to be paid, are $\frac{1}{4}$ to 1 higher. Great Easterns and North-Easterns are easier, but the A stocks of Brighton and South-Easterns favourably acted upon by their traffic. North Stafford and Lancashire and Yorkshire both sensibly improved. The improvement in Metropolitan Districts barely held, though takings are still very good. In Canadian several severe changes have occurred on rumours touching the trade of the country, but on the week Grand Trunk Ordinary is 1, First Preference $\frac{1}{2}$, Second and Third Preference 2, and Great Westerns 1, 3d. per share higher. Trunk Traffic to-day totals 55000. Increase. Americans keep steady; New York, Pennsylvania, and Ohio First Mortgage, after moving sensibly higher, show signs of weakness from want of support.

NEWCASTLE-ON-TYNE.—Mr. S. N. CHALLONER, stock and share broker, Grey-street (Sept. 20), writes:—Furness Railway stock continues firm at 121 $\frac{1}{2}$ to 122. Hull Barnsleys unchanged at 53 to 64. Maryport and Carlisle are 3 lower at 191 to 193. Barrow Steel shares are unaltered at 94 to 95. Bolckows at 194 to 195; ditto, 127. paid, at 114 to 115. Chillington Iron $\frac{1}{4}$ lower at 14 to 15; Consett Iron, $\frac{1}{4}$ to 23; ditto; Barle's Shipbuilding, $\frac{1}{4}$ to 21; ditto; Palmer's A $\frac{1}{4}$ better at 28 to 29; B, $\frac{1}{4}$ to 20; ditto (cum. div.); Peisall Coal, $\frac{1}{4}$ to 9; ditto; Sir W. G. Armstrong-Mitchell, $\frac{1}{4}$ to 120 to 120. West Cumberland Iron with-out change at 8 to 8; Teesside Iron Preferred, at 14 to 14. Moss Bay offered at 15. North-Eastern Bank $\frac{1}{4}$ higher, at 6 to 6; Consett Water, $\frac{1}{4}$ to 8 to 6; Newcastle Water, at 175 to 176; ditto, 1375 issue, at 134 to 136; Wear-dale and Shildon, $\frac{1}{4}$ to 21 to 21. Newcastle Gas at 175; Hartlepool Gas and Water A at 8; are unchanged. Langdales remain $\frac{1}{4}$ to 3; but are rather flat in tone. Lawes are a shade firmer at 55 to 55. Newcastle Chemicals, after being 47s. 6d., are without change on the week at 45s.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, stockbroker and ironbroker (Sept. 20), writes:—During the past week the market has been very quiet, although the tendency of prices is generally upwards, owing to the easier tendency of the Money Market, the calmer state of foreign politics, and the beneficial influence the improved harvest prospects are likely to have upon trade.

In shares of coal, iron, and steel companies prices are steady. Most of the companies are doing a large business, but prices are not remunerative, although it seems probable the price of coal must advance, yet the price of pig-iron remains flat, pending some new feature. Blisken and Crum are at 5s. 10s.; Clyde Coal, 6s. 6d. to 6s.; Chillington Iron, 2s. 6d. to 2s. 7d. 6d. Mar-bell has improved to 6s. 6d., and New Shirlston (Preference) 8s. 5d. to 8s. There has been more business doing in shares of foreign copper and lead com-pa-nies. Tharish has declined from 6s. 15d. to 6s. 11d. 6d. Montanias have

been in demand on favourable reports from the mine, which are understood to be confirmed by independent testimony pointing to the concern proving a great success; shares have, therefore, advanced to 37s. 6d., 42s. 6d. Arizonas have improved from 35s. to 45s.; Canada Copper, 10s. to 11s.; Sentein, 7s. 6d.; Souback and Catir Alan, 10s. to 11s. 3d.

Shares of home mines are quiet. The upward tendency in the tin market should direct attention to some of the cheap tin mines. Camborne Vean are 2s. 6d. to 5s.; Cambrian, 2s. 6d.; Colliacomb, 7s. 6d. to 10s.; Devon Great United, 2s. to 4s.; East Blue Hills, 3s. to 5s.; East Devon Consols, 5s. to 10s.; East Wheal Hony, 5s.; East Craven Moor, 3s.; East Wheal Rose, 8s. to 10s.; Frongoch, 8s. to 11s.; Great Holway, 60s. to 80s.; Goginan, 5s. to 7s.; Gunnislake (Clitters), 28s. 9d. to 31s. 3d.; Killfret, 35s. to 40s.; Mounts Bay, 5s. to 7s.; North Busy, 2s. 6d. to 5s.; North Herodsfoot, 1s. 6d.; Old Shepherds, 8s. to 10s.; Parys, 1s. to 3s.; Penhall, 4s. to 6s.; Rhosmor, 40s. to 50s.; South Devon, 3s. 6d. to 5s. 6d.; Tamar, 10s. to 12s. 6d.; Trebartha Leman, 3s. 9d.; Tregrontres, 5s.; Van, 97s.; West Holway, 10s. to 12s.; and Wheal Lusk, 1s. to 3s.

In shares of gold and silver mines prices are generally easier. Isabelle bonds offered; Alamos are at 5s. 6d.; Apollonia, 35s.; Asia Minor, 10s. to 12s. 6d.; Broadway (Preference), 2s. 6d. to 5s.; Colombian Hydraulic, 4s. to 6s.; Call-fornia, 12s. 6d. to 13s. 9d.; Colar, 1s. 6d.; Cankim Barrow, 4s. to 6d.; Flag-staffs, 2s. to 3s.; Guinea Coast, 1s. 3d. to 2s. 6d.; Glasgow Gold, 40s. to 50s.; Kohinoor B, 7s. 6d. to 10s.; Kapanga, 2s. 6d. to 5s.; Mysore, 3s. 9d. to 5s.; New Gold Run (Preference), 2s. to 4s.; New Callao, 7s. 6d. to 10s.; Oregums, 1s. 3d.; Potosi, 10s. to 12s.; South African Syndicate, 20s. to 25s.; Silver Peak, 1s. 6d. to 2s. 6d.; Victoria Gold, 10s. to 12s.; and West Callao, 10s. to 15s.

In shares of miscellaneous companies the principal feature is again an improvement in oil shares, but the others are generally lower, especially Noble's Explosives, which have declined to about 24; Home Mines Trust, 9s. 6d. to 10s. 6d.; and Lawes Chemicals, 6 to 6 $\frac{1}{2}$.

EDINBURGH.—Messrs. THOS. MILLER and SONS, stock and share brokers, Princes-street (Sept. 19), write:—Since last report Scotch railway stocks have advanced in price. Canadians show a marked improvement. A very large business has been done in Arizona Copper shares at constantly changing quotations. A fair business has been done in oil shares. Bank shares have been steady. Since Wednesday last week North British has risen from 102 $\frac{1}{2}$ to 103 $\frac{1}{2}$, Edinburgh and Glasgow from 39 $\frac{1}{2}$ to 40 $\frac{1}{2}$, Great North from 58 $\frac{1}{2}$ to 57 $\frac{1}{2}$, Portpatrick from 71 to 71 $\frac{1}{2}$, Grand Trunk from 19 $\frac{1}{2}$ to 17 $\frac{1}{2}$, the Second Pref. from 85 $\frac{1}{2}$ to 88 $\frac{1}{2}$, the Third from 39 $\frac{1}{2}$ to 42 $\frac{1}{2}$, Readings from 26 $\frac{1}{2}$ to 26 $\frac{1}{2}$. Canada North West Land have fallen 70s. to 62s. 6d., but have recovered 67s. 6d. Prairie cattle shares have declined to 8 $\frac{1}{2}$, Arizonas after falling from 36s. 3d. to 33s. rose to 45s., and relapsed to 45s. 6d. Burntland Oil have advanced from 24 $\frac{1}{2}$ to 25 $\frac{1}{2}$, Clippens from 16 $\frac{1}{2}$ to 18 $\frac{1}{2}$, Uphall from 9 $\frac{1}{2}$ to 9 $\frac{1}{2}$, Lanark are 95s. to 95s. 6d., Eries from 32 $\frac{1}{2}$ to 32 $\frac{1}{2}$.

IRISH MINING AND MISCELLANEOUS COMPANIES SHARE MARKET.

CORK.—Messrs. J. H. CARROLL and SONS, stock and share brokers, South Mall (Sept. 20), write:—Great Southern changed hands to-day at 120 $\frac{1}{2}$ to 120 $\frac{1}{2}$, and Midlands at 84; Bandons remain 85, and Macrooms 6; National Banks were bought at 24 $\frac{1}{2}$, and Munsters at 6 13-16ths to 6 $\frac{1}{2}$; Hibernians declined to 24 $\frac{1}{2}$, 24 $\frac{1}{2}$; no change in Provincials; Alliance Gas changed hands at 17 $\frac{1}{2}$ to 17 $\frac{1}{2}$, and Cork Gas at 7; Gouldings remain 8 $\frac{1}{2}$ to 8 15-16ths, and Levys 5 $\frac{1}{2}$ to 5 $\frac{1}{2}$; Lyons fully paid shares now offered at 6 7-16ths, and Gresham Hotel asked for at 3 $\frac{1}{2}$; Breweries are offered at 5, and Harbour Board Debentures changed hands at 100.

WATSON BROTHERS' MINING CIRCULAR.

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Killas is a hard clay-slate, and in early times was looked upon as the favoured strata for mineral; but, in fact, no hard and fast lines can be laid down. In some places ores make in killas, and split up, and become impoverished when they touch the granite, and in others it is just the contrary. In old Tresavean the great deposits of copper were found in a great basin of granite, and the lodes split up when they reached the killas, though near this junction of killas and granite has always been regarded as the most favourable for ore. Tin and copper lodes generally run east and west, and dip—that is, go slanting down into the earth (likened to the roof of a house) north or south, and this is called the underlie or dip. The heaviest known metal is platinum, first found in South America in 1741. Of all metals it expands the least by heat, and resists most agents, thus it is used for pendulum watch wheels, speculums, &c. The ordinary yellow copper ore of Cornish mines does not average more than about 5 per cent. Variegated, or peacock, ore is sometimes 50 per cent.; grey copper, 40 per cent., and a great deal of this used to be raised at Botallack and Levant. Black copper ore about 30 per cent. Native, or malleable, copper is very rare, and is sometimes over 90 per cent. copper. This used to be found near the Lizard, and some has been found at the Prince of Wales, as well as red oxide, which is also very rich, and found in former times in the neighbourhood of Gwennap. The word "wheal" does not occur in old works on mining.

In Mr. Watson's Compendium of British Mining, published in 1843, there is a glossary of mining terms, taken from an old Cornish MS. This was afterwards published as a small book at the office of the Mining Journal, and probably copies may yet be obtained. In this we find, under the head "Wheal"—the ancient Cornish called a mine "Huel," which has been corrupted into "Wheal." The miners themselves called and still call a mine a "bal." The "back" of a lode is that nearest the surface. When a lode splits up for a time with a hard bar of ground between the branches, it is said "to take horse." A "stem" is a day's work. "Saving work" in mining means that the ores being broken are about paying the cost of labour in getting them.

We have often described the extraordinary size of the lode at the D'Eresby Mountain Mine, and the best part of it is now below No. 6, or deepest level; and as this is under what is called the "old men's bunch," which was said to be so very rich at No. 4 level, a rise is being made in the stopes from No. 6 to No. 4, which will, in reality, be a new shaft from surface in the very heart of the ore ground, and when this is completed the agent has no fear as to the mine paying well, and making a profit even at the present price of lead. We believe the shaft will go down below No. 6 in a great course of ore, and levels will be extended in it southwards. To raise capital a short time ago 7000 shares were offered to shareholders only at 5s. each, and 5000 were taken. If our correspondent can get any of the 2000 unissued at that price he had better do so. We took 1500, but still the average of those we hold exceeds 17 per share; those, therefore, coming in at 5s. have a great advantage.

Except the lode in Van, there is no other in Wales so large as that of D'Eresby Mountain.

The springs are still dry at the East Blue Hills stamps and the tin is being stocked: so that we hope to have a good sale as soon as the water rises. The stopes are looking well, and a shareholder in the mine this week writes that he saw a pile of best work that would not disgrace Dolcoath. Good progress is being made at the eastern shaft, which is now enlarged and timbered 13 fathoms, and will soon be down to the adit. Sinking will then be commenced under the best stopes on a good tin lode to open up another level. Everything points to a good property; but only having stamps worked by water-power we cannot control the seasons, and the present one, our correspondent writes, has been the driest remembered by the "oldest inhabitant."

Prince of Wales is looking more promising both at the 102 east and west and 90 west. The sale of ore on Thursday realised 248 $\frac{1}{2}$. 60 tons was only burnt leavings from the tin dressings: 3 tons brought 22 $\frac{1}{2}$ 5s. 6d. per ton.

Mr. McMillan, one of the directors of Bratsberg, has just visited the mine, accompanied by Capt. W. R. Rutter, of Camborne, and we understand he is much pleased with what he saw and heard. Capt. Rutter's report, we also hear, bears out the satisfactory account hitherto made of the property. The report has been placed by Mr. McMillan, and the large shareholder in whose behalf it was made, at the service of the shareholders generally, who will probably receive a copy next week.

From what we can learn Capt. Rutter considers the mine capable of returning at present 150 tons a month, or 20 per cent. ore, at an

ordinary cost of about 1000 $\frac{1}{2}$ a month. The late sales of ore are of course from the accumulations on the mine since October of last year.

We firmly believe that every one who takes his proportion of shares in Langford at 5s. each will ere long recoup all he has invested in the mine. If we did not think so we should not take 1000 shares in the present depressed state of mining. We think, however, a discovery may soon be made to improve matters, and already the market shows signs of improvement generally.

Since the above remarks were written on Langford, and under date of the 20th, Capt. Gregory writes—"I am pleased to inform you we are taking down the lode in the back of the 20 fathom level east of engine-shaft, which is producing rich copper and silver ore, intermixed with very good gossan. A box of this ore has been sent per mail this evening and will be found equal to the rich class ores raised here and in East Cornwall many years since."

FOREIGN MINES.

ALAMILLOS.—Sept. 12: The lode in the 20, driving east of San Martin's shaft, is small and unproductive at present. The 60, driving west of San Felipe's shaft, has declined in value to $\frac{1}{2}$ ton per fathom since the last report. In the 50, driving west of San Felipe's shaft, the lode has an improved appearance, and is producing nice lumps of ore, valued at $\frac{1}{2}$ ton per fathom. The lode in the 85, driving east of San Enrique shaft, is still of no value, and the granite is very hard for driving. The 130, driving east of Taylor's engine-shaft, is quite unproductive. In the 130, driving west of Taylor's engine-shaft, the lode is large and well defined, but yielding a little less ore than formerly, its present worth being $\frac{1}{2}$ ton per fathom. The 30, driving east of San Victor's shaft, is passing through a strong, fine-looking lode, worth $\frac{1}{2}$ ton in a fathom. The 80, driving west of San Victor's shaft, is opening up stoping ground that yields $\frac{1}{2}$ ton in a fathom. The lode in the 70, driving in the same direction, is large and open, and spotted with ore. The 70, driving west of Judd's shaft, produces stones of ore occasionally. The lode in the 20, driving west of the adit shaft, is regular, and yielding good stones of lead ore, worth $\frac{1}{2}$ ton per fathom. Bartolo's mine is still in very hard granite, and the men are making very slow progress. Anieto's mine is passing through a profitable lode, yielding $\frac{1}{2}$ ton per fathom.

BARANCOANES COPPER.—J. Garland, Sept. 10: The engine-shaft was sunk last month 1 m. 3 ft. Our progress during the first half of the month was slow, owing to the hardness of the rock, and the latter part of the month was occupied in dividing and casing the shaft and putting in footway, which work was completed for the first 13 fms. by the end of the month. The horse whim has been erected and is in regular work. The cross-cut driving towards engine-shaft from the 24 south was extended 2 $\frac{1}{2}$ metres (say 1 $\frac{1}{2}$ fm.). The rock here also is a hard blue gritty slate, and the native miners do not make much progress in it. In No. 1 stope in the back of the 24 north 33 $\frac{1}{2}$ squares metres of lode was broken, and sent to surface at 9s. per metre. The lode averaged about 3 feet in width, and yielded from $\frac{1}{2}$ to 1 ton of copper ore per fathom. At surface fair progress has been made in taking out ground for crusher and other machinery, and the engine-house is ready for the winding-engine. We have nearly half of the machinery on the mine and hope to transport hither the heavier portions shortly.

BELT COPPER.—A. Brand, Aug. 28: My last report was dated Aug. 8.—Champion: The No. 1 level east is in good vein, with both small barrel and heavy stamp work.—No. 2 Level East: A large crossing which we had before in No. 1 level has now been reached. It has thrown the vein, and we are now cross-cutting to find it. By the appearance of the rock I judge we are in the foot of the vein. No. 2 shaft is still in good rich heavy stamp work. We have started rising from No. 2 level to meet this shaft, and help our ventilation. No. 3 levels east and west are in vein, but at present showing little copper. During the past fortnight a drill has been employed stoping in No. 2 level, to get our track improved. The vein appears to be over 15 feet wide, and is very rich in barrel and stamp work.—Knowlton: No. 1 level east is now in 100 feet, and has been rich up till yesterday. We are now driving through a crossing, which is probably not very thick. Wolsley's vein has been thrown very far out of place. We struck it after driving 75 ft., and have found it so far to be 8 ft. wide; part of this was very rich in round pellets or shots of copper—excellent stamp work. We are in at present what appears to be the footwall, but it still carries copper, so we will go a little further until we strike the trap, this vein often making large bunches at the foot.—Stamp Mill: The stamp-house is now boarded in, and ready for shingles. Frame of boiler-house nearly finished raising, two wash-floor about one-half up.—Railroad: Grading goes on rapidly. We are now within 500 ft. of the mill, and at the mine end we have about 800 ft. to do. The new engine-house at Champion is now boarded in and roof shingled. The foundations of Knowlton's engine-house are nearly completed. Nothing further to report.

BUENA VENTURA.—Sept. 15: In the 25, driving east of Atliana shaft, a great length is being opened up; but the lode is very fluctuating. At times it yields splendid rocks of ore, but the average value is very low, its present worth is $\frac{1}{2}$ ton of ore in a fathom. The lode in the 25, driving west of Atliana shaft, is very open, consisting chiefly of carbonate of lime and yielding good stones of ore. In the 20, driving east of Taylor's shaft, the lode has declined in value to $\frac{1}{2}$ ton per fathom; but we expect it will improve again shortly, as there is a good lode in the 10 over it. The works at surface are kept on very regularly, and the machinery is in excellent condition. The tributers are well and returning moderate quantities of ore.

CALIFORNIA GOLD.—Mr. Alfred H. Hall, Aug. 25: The 1450 ft. level west is in 17 ft.; the lode is of a fine character, being 3 ft. wide, strong and well defined, and yielding 7 tons of ore per square fathom. The lode in the stopes of the 1450 ft. level east yields 4 $\frac{1}{2}$ tons of ore per square fathom of fair grade. The 1400 ft. level east is in 133 ft.; the lode is small in the drift, but better in the stopes; yielding 4 tons per square fathom. The 1400 ft. level west is in 113 ft.; the lode is improving, and carries 12 in. of fair looking milling ore. The stopes will yield about 5 tons of ore per square fathom. The lode in the 1300 ft. level stope west is 5 ft. wide, 2 ft. thick, and is fair grade milling ore; value 7 tons per square fathom. The 1300, 1100, 700, and 300 east are on tribute, and the tributers are making a good output and doing fairly.

—Mr. Rickard telegraphs the directors on the 20th inst. as follows:—"Mill run 370 tons, yield \$3300 (\$607); smelting ore sales \$1500 (\$207). Splendid lode 1400 east. Started shafts."

CANADIAN COPPER AND SULPHUR.—Francis Bennetts, Sept. 7: Hartford Mine: There is no important change to report, except that we have stones of copper ore in the cross-cut south at the 23, east of No. 5 shaft

MONKLAND IRON COMPANY.—The report of the directors embodying accounts for the 12 months ended June 30 has been issued. The amount at debit of account on July 1, 1882, has been increased to 20,691*l*. 12*s*. 5*d*. The report states that for this result the shareholders cannot have been unprepared, the price of iron and coals having during the period in question been very low. It will be observed that the item of interest still amounts to a very large sum; but in the current year the amount will be moderate, the purchase price of the works and stocks having now been paid in full. Every exertion is being made to reduce the stocks, so as to enable the company to repay the bank overdraft. The directors during the past year have had prepared an inventory and valuation of the whole property and assets of the company, the works on the basis of their value to break up, the pits, dwelling-houses, &c., at such prices as may fairly be estimated would be realised. The amount of such valuation is £103,333*l*. They have with the result of ascertaining that the stock of ironstone has been over-valued to the extent of 14,103*l*. 12*s*. 3*d*. In order, therefore, to a more correct adjustment of the two items of works and stocks they have deducted from the amount of the stocks as shown by the books the said sum of 14,103*l*. 12*s*. 3*d*. and carried the same to the works, thereby bringing up the cost of these to 99,078*l*. 9*s*. 7*d*., an amount which approximates closely to the inventory and valuation already referred to. Owing to the unprofitable results of the ironmaking department the business, attention has been given to the iron casting and engineering side, and, it is said, and with a successful result, the branch will prove remunerative. At the present time, in addition to the coals used in the manufacture of pig-iron, between 500 and 600 tons are put out daily; these find a ready market at a small profit, and before long it is hoped the daily output will be 1000 tons.

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BRITISH MINES.

ANDERTON TIN.—W. J. Bowhay, Sept. 12: Our engine and pumps are working well, and we have forked the water in the shaft 10 fms. We are now removing some old timber to drop the pumps another lift. The shaft is sound and firm, and by the end of the week hope to get down near the 20. The lode in the level is as formerly reported, and the water in the lead admits of keeping the stamps in constant work. We are still very busy with a multitude of little things, but all is going on well.

BEDFORD UNITED.—H. Trezise, Sept. 13: The drivages on the north lode are being continued by the side of the lode for more speedy progress. There is no change to report. The tribute pitches throughout the mine are looking fairly well, and the tributaries are earning good wages. In Bridge lode the shaftmen are making fair progress in fixing rods, lift, &c. In the 62 west the lode is 4 ft. wide, composed of munda mixed with yellow and black ore of excellent quality, and looking promising for further improving—a very kindly lode indeed. In the 62 east the drive is by the side of the lode. We shall commence to take it down in a day or two. We have not taken down any lode in the 42 east. The several stopes in the 42 and 30 are about the same value as for some time past. There is a promising lode in the winze sinking below the 30 west. There is no change to report in the 30 east.

BLUE HILLS.—S. Bennett, R. Harris, H. Gripe, Sept. 19: The Pink lode in the 66 east end is not so productive as it was a few days since. At present its value is about 5s. per fathom. The Baldu lode in the 54 west end continues to produce some low quality tinstuff, worth about 4s. per fathom. The 42 east end is worth 5s. per fathom. In the 20 east end the south section of the lode, although of a fair average width, is poor. This is so far disappointing, considering a good lode was found opposite on the other side of the fault. **BWICH UNITED.**—W. Norrey, Sept. 19: The lode in the 100, west of Ritchie's engine-shaft, has undergone several changes since the date of my last advice, and for a few days it became small and unproductive, but I am pleased to state that the lode has again formed its usual width and kindly appearance, embedded in a congealed strata showing patches and small ribs of lead ore. On Sunday night the main-rod broke, which stopped the men from driving for about 36 hours; but I am pleased to state that we have repaired the rod, drained the water, and the men are again in full work. The machinery is in good working order.

CARN CAMBORNE.—W. C. Vivian, Sept. 20: We are not finding so much tin in the 95, east of dump, on the south lode, as we did when first cutting through it, but hope to find it again improving shortly. In the rise in the back of the 95 west the lode is much the same as when last reported, producing about 2½ tons of very good copper ore per fathom. In the 40 west, on north lode, we are again cutting through the lode southward, where we hope to find it more productive than where we have in the last few days been driving west in it—that is in the north part.

CATHEDRAL.—Stephen Davey, Sept. 20: Setting Report: The engine-shaft to sink below the 74 by nine men, at 32s. per fathom, the lode is 2½ ft. wide, producing good stones of copper, and in the peach in the footwall, for 6 in. wide, we are breaking good stones of tin. The 74 to drive east by six men, at 9s. per fm., and 2s. 6d. in 1½ ft. tribute for saving the tinstuff; the lode is 1½ ft. wide, mixed with tin and copper. The 62 to drive east by six men, at 4s. 10s. per fm.; the lode is still of a soft and decomposed nature, and letting out water freely, which makes it difficult to deal with. We have decided to-day to drive a few fathoms by the side of the lode, and drain it by short cross-cuts 3 or 4 fms. apart—Lawry's Shaft: Little has been done in the winze sinking below the 15, east of shaft, since last report, owing to imperfect ventilation.

COLLACOMBE CONSOLS.—Wm. Skevis, Sept. 20: We have commenced to drive a cross-cut at the 96 20 fms. further east than the first cross-cut to the new lode, and believe we are close to it, seeing the large quantity of water that is now coming from the end. The men have taken out the stall between the old and new lodes, and are now cutting through the new lode for 3 fms. high, but have not yet cut through, so we cannot say the size; it is, however, turning out well for copper ore. All the other places are much the same as reported for the meeting. We shall commence dressing in the early part of next week.

CREIGIOL.—H. Hotchkiss, Sept. 19: Meadow Shaft: There is no further change in the 130 cross-cut, neither in the 110 going out west upon the lode. In the winze underneath the 60 we have a promising lode, which contains two ribs of carbonate of lime 4 in. wide; each very nicely mixed with lead ore for about 3 ft. in length.

CWMYSTYLL.—Joseph B. House, Sept. 19: We have not as yet commenced to drive Gill's upper level (west of the western cross-cut on the new lode) as the men have been employed clearing the level, which was full of debris. They are now putting in railroad, &c., which, I expect, will be completed by the end of the present week, when the level will be set to drive by four men. Gill's lower level, west of No. 2 winze on the new lode, is suspended for the present. The lode in the stope over Gill's lower level, west of No. 2 winze, on the new lode, is 3 ft. wide, worth 15 cwt. of lead and 1½ ton of blende per fathom. We have nine pitches, yielding on an average from 9 to 10 cwt. of lead and 1½ ton of blende per fathom; also four pitches which are yielding fair quantities of both lead and blende. We have put two additional men at the big rock (halvans) to blast down the sides, where there are some good patches of lead left by the old workers.

OWM DWYFOR AND BRYNARIAN.—J. Davies, Sept. 20: Brynarian Mine: We have finished drawing to-day. All the levels are clear. Now we shall go on with the cross-cut to reach the Brynarian lode.

DREBBY MOUNTAIN.—J. Roberts, W. Sandoe, Sept. 19: The stopes in the roof of the No. 5 intermediate level continue to look very well, and are working, as we reported them last week, fully 2 tons of lead to the fathom. The No. 5 intermediate end driving south has in it some branches of lead, and is looking very kindly. The clearing of No. 4 on the heading is being still pushed on. The level is cleared, and we shall commence to clear the sump to-morrow.

DEVON FRIENDSHIP.—F. R. W. Daw, W. Gill, Sept. 20: Setting Report: The 42 east end of Bennett's engine-shaft, is set to two men, at 7s. 12s. 6d. per

fathom; the lode is about 2 ft. 6 in. wide, but at present not to value. The 42 end, west of shaft, is set to four men, at 5s. 12s. 6d. the lode is 3 ft. wide, and worth for arsenical munda 12s. per fathom. The stope in the back of this level is set to two men, at 3s. 5s. per fathom; the lode is 3 ft. 6 in. wide, and worth 11s. per fathom. Rickard's stope in the back of the 30, west of Bennett's engine-shaft, is set to two men at 1s. 15s. per fathom; the lode is about 4 ft. wide, and will yield 1 ton of copper ore per fathom. Floyd's stope, in the back of this level, is set to two men, at 1s. 15s. per fathom; the lode is 3 ft. wide, and worth 6s. per fathom for arsenical munda. The winze in the bottom of this level is set to two men, at 5s. per fathom; the lode is 3 ft. 6 in. wide, and worth 11s. per fathom for arsenical munda. We are breaking some very good stones of copper in this winze. Driving and stopping west of ladder set to two men, at 2s. 15s. per fathom; the lode is 7 ft. wide, and worth for arsenical munda 9s. per fathom.

DEVON GREAT CONSOLS.—Isaac Richards, Sept. 20: Wheel Josiah: In the Court-house shaft, sinking below the 144, the lode is 3½ ft. wide, composed of capel and quartz, with small quantities of copper and munda ores.—Wheel Emma, Inclined Shaft: In Glanfield's rise in the back of the 137 east, the lode is 4 ft. wide, yielding 3 tons of copper ore and 3 tons of munda per fathom.—New Shaft, New South Lode: In the 205 east the lode is 2½ ft. wide, composed of capel and quartz, with peach, a little copper ore, and 2 tons of munda per fathom.—Railway Shaft: In the 205 west, on the south part of the lode, the drive is being carried by the side of the lode for more speedy progress. In Southcomb's winze sinking below the 190 west, the lode—part carrying 5 ft. wide—is of a promising character, and yields small quantities of copper and munda ores. In the 160 west a small cross-course has been intersected, by which the lode for the present is disordered. We hope, however, to see it again soon in a more settled state, as the drive advances beyond the influence of the cross-course.—Watson's: In the engine-shaft sinking below the 100 the lode—part carrying 2 ft. wide—is composed of capel, quartz, peach, munda, and a little copper ore. In the 100, west of engine-shaft, the lode is 4 ft. wide, of a promising character, and continues to yield good stones of copper and munda ores. In the 20, east of the western shaft, the lode is 2 ft. wide, composed of capel and quartz, with a little copper and munda ores. There is no important alteration at any other of the points of operation throughout the mines.

DEVON GREAT CONSOLS.—Isaac Richards, Sept. 20: In the 120, east of Willesford's shaft, the lode continues to yield 1 ton of copper ore per fathom; and we have great hopes that further improvement will take place. In the 120, west of Willesford's shaft, the lode has materially improved; it is now from 3 to 4 ft. wide, and, as advised by telegram yesterday, is yielding 3 tons of copper ore; worth 12s. per fathom. Judging from present indications, a further improvement at this point may also be expected; the distance driven during the past week is 1 fm. 3 ft. The ground in the cross-cut north at the 60, west of Watson's shaft, on the middle lode, is of a very congealed character for the production of mineral, and is tolerably fair for progress.

DRAKEWALLS.—Moses Bowden: Setting Report: The shallow adit to drive west of engine-shaft, by four men, at 6s. per fathom. The stope in the back of the 24, west of ditto, by four men, at 2s. 15s. per fathom. The stope in the bottom of the deep adit, east of Matthew's shaft, by four men, at 2s. 15s. per fathom. Thirty-four men on tribute, at 10s. in 1½, with a standard of 50s. per ton for black tin; six men assisting pitmen, three assisting timbermen, four fillers, four trimmers; together with pit and timberman, 71 men underground. We have had, and are still having, very considerable appearances in looking in draining the mine with the old lift left standing in the shaft. We had, however, now at the 9, but it will take some days to clear the stuff in the shaft here before we can do anything at this level, and we have no doubt but that this (the engine-shaft and Matthew's shaft) are both full of stuff from this point to the 102 or bottom of the mine. Every effort will be made to reach the bottom as soon as possible, and should we find the lode there as valuable as it has been reported to us, we may expect a good mine. The north branches in the shallow adit are producing some good tinstuff. We opened on them last month, and they are now yielding 1 ton of copper ore per fathom. The character, and should they go down through the mine as we have fair reason to expect, we shall have some considerable assistance in our returns. We are pleased to see the number of tributaries increasing, and hope the number will still further increase when we get to work between the deep adit and the 90, and, with a little better price for black tin, we shall soon have the balance on the right side. We shall have at least another 10 tons of tin ready for sale in four weeks from date of last sale.

EAST BLUE HILLS.—S. Bennett, W. K. Mitchell, Sept. 19: The clearing and enlarging of the eastern shaft is progressing satisfactorily, and is now completed to a depth of nearly 14 fms. from surface. A rise towards this shaft above the 30 is nearly completed to the 25 (the bottom of the shaft). Another rise is being put up above the 40 for the same purpose, and also a stope will be utilised for the shaft above the adit, so that in the course of another three months we hope to get the shaft completed to the adit level, and in readiness for sinking below. The two stopes now at work in the back of the adit are worth respectively 6s. and 7s. per fathom. There is practically no water stamping purposes at present; the little we have in use for the dressing of the slime. **EAST BOTALLACK.**—Thomas Trahair, Sept. 19: The shaftmen will complete the cutting of the plat this week. We have commenced to put in a double skip-rod, and hope to complete it the early part of next week, when we shall recommence driving the east and west 10 fm. levels. In our adit end driving east we have met with a cross-course which has disordered the lode. The ground in the western shaft is looking just the same as last reported. The stamps and machinery are working very well.

EAST LARREN.—Thomas Gland, Sept. 19: The 92 end west is still in hard ground for exploring, being chiefly composed of beds of grit and branches of carbonate of lime, spotted with munda and lead. The lode in the 80 end, west of stope, is 5 ft. wide, yielding 1½ ton of lead ore per fathom. The stopes are without change to notice, yielding on an average 1 ton of lead ore per fathom. All surface work is progressing regularly, and there is a sufficient supply of water for all purposes. **EAST TREGEBO.**—E. Chegwain, Sept. 19: The adit end north-west of Carrie's shaft on the Ten O'clock lode is in 1½ fm.; the lode is 2½ ft. wide, and worth 12s. per fathom. The adit end south of Carrie's shaft is looking to improve as we advance and get near the east and west lodes. In the stope in the back of the adit level the lode is 3 ft. wide, and worth 15s. per fathom. Altogether the mine never looked better than to-day.

EAST WHEEL LOVELL.—R. Quantrell and Son, Sept. 19: Engine Lode: The lode in the stope in back of the 46 east is worth 8s. per fathom.—Rogers's Lode: We have communicated the winze below the 54 east with the rise above the 66, and have commenced stoping in a lode worth 8s. per fathom. The lode in the 54 east, south of the 66, is 3 ft. wide, and worth 15s. per fathom. The lode in which we are driving the 12 east is worth 6s. per fathom, and the ground is very favourable; price for driving 3s. 10s. per fathom.

EAST WHEEL ROSE.—T. Doidge, Sept. 13: We are pleased to inform you that we have set a bargain to a pair of men to sink a shaft on Middleton's lode to the north of Gower's shaft. They have to sink the shaft, and open up all the ground they will require, at their own risk and expense, and the ground thus laid open to be worked by them on tribute.

EAST WHEEL ROSE.—T. Doidge, Sept. 15: There is no particular change to notice in any point of operation during the past week. We shipped on Thursday last 50 tons of arsenic ore to the Combe Arsenic Company, and hope to get another 50 tons in about three weeks' time.

GAWTON.—W. Bowden, Sept. 19: I have to-day been through the underground workings at this mine. At 117 east we have for the last month been cutting south through the lode, and for the distance cut into (15 ft.) it will yield some good quality arsenical munda, with rich stones of copper ore, and it is our opinion that the best part of the lode is still standing south. This is proving an important fact for the future of the mine, as we cannot but believe that a lode of such a character will be profitably productive to the shareholders. We shall continue driving south until the lode has been cut through. The trial winze is now down 10 fms. 1 ft. below the 117. We have set a contract to put it down to 15 fms. below said level, when we shall cut north and south through the lode and drive east and west on it, as before-mentioned. This winze is proving beyond doubt the great lode of arsenical munda driven through at the 117 is holding down. We are making the necessary preparations at the engine-shaft through which to drive in a line of rods, so as to keep the trial winze free from water. We have the following men at work underground: Six cutting through the lode at the 117 east; 12 stoping back of the 117 east; nine sinking trial winze; eight stoping back and bottom of the 105 east; two driving the 90 east; four cutting ground for rods in the 105; eight stoping back of the 70, directly east of engine-shaft; two stoping bottom of the 32, west of engine-shaft. At this point and in back of the 70 we have a very large and productive lode of arsenical munda, and we expect by working here to get more copper ore than hitherto, and at the same time further prove our lode west. I notice that our sales of arsenic alone have more than met our mines cost since my letter of July 30 (which was issued to the shareholders); and I would repeat that any fresh discovery beyond what we are now working would leave a profit to the company, and this we certainly expect. We are hand-picking and selecting our arsenical munda, and jiggling the smalls with good effect.

GODDARD'S LEAD AND BLEND.—R. H. Vivian, Sept. 20: Since last week we have driven through a hard bar ground in the east adit end, but are now through into usual vein, with nice blende, gossan, and lead ore—a very promising lode. I am certain we are getting over good ore ground in driving this end, as the ore seems to be downwards.

GOODEVERE.—R. Knott, Sept. 19: I have nothing new to report this week. Everything going on with the greatest regularity, and the engine-shaft is looking much the same as for some time past.

GREAT LAXEY.—W. H. Rowe, Sept. 13: The cross-cutting in 235 south shows a strong sparry lode about 10 feet in width, spotted throughout with copper, iron pyrites, and blende, but not enough to value. The lode in the engine-shaft below this level has been yielding good stones of ore in the past week, but it is irregular, and now not so good. The 259 end north after holing to the winze has been driven about 2 fms. beyond it; lode just now composed almost entirely of rock and unproductive. The 247 end is also poor, and I regret to say this is the case with the lode where intersected by the cross-cut in the 235 north. We may, however, hope and expect to find the lode producing ore after opening upon the course a little. The winze in this level is worth 12s. per fathom. The present value of 230 end, north of Dumbell's shaft, is 12s. per fm. The 229 end, north of the 230, is 22s. per fm. The 224 end, north of the 229, is 22s. per fm. An improvement occurred in the lode in the 185 end a few days ago, but it has fallen off in value again to 6s. per fathom. The 170 end is still poor. The winze in the 60 north continues of the same value as the stope in roof of the 85—35s. per fathom. I have not referred to the various other stopes and workings throughout the mine, as our general report is shortly due, and they will then be fully described.

GREAT WEST CHIVERTON.—John Curtis, Sept. 13: In the 20 both east and west the lode is 2 ft. wide producing good stones of lead, much the same as when last reported on.

GUNNLSLAKE (CLITTERS).—J. C. Seccombe, C. W. Seccombe, Sept. 17: We are pleased to report an important improvement at this mine in the 133, east of engine-shaft. The lode has opened out to about 3 ft. wide, containing red oxide and grey copper ore mixed, of very high percentage; its value for the part seen is 35s. per fathom. We shall be in a position to report more fully in a day or two. We consider this discovery of greater importance from the fact of its being the nearest east to the Old Gunnlslake Mine, where the ore was similar in character and richness.

—Sept. 19: The lode in the 236 east is 3 ft. wide, composed of capel, spar, peach, and occasional stones of copper ore; the western end of this level is in a cross-course. The lode in the 224 west is poor. The lode in the 212 west is worth 6s. per fathom, with every appearance of further improvement. In this level east the lode is producing saving work for copper ore; but not sufficient

to value. The lode in the 200 west is worth 8s. per fathom. In this level east we have intersected the lode east of the cross-course, but sufficient is not yet done to speak of its value. The lode in the 183 east continues fully of equal value to that reported on the 17th inst.—35s. per fathom. We consider this to be a new feature in the mine, and from its character promises to be a valuable discovery, being in virgin ground to the boundary of our sett. In this level west the lode has improved in appearance, producing saving work; but not sufficient to value. The rise in back of this level is worth 6s. per fathom. The lode in the 176 west is poor. In the 164 east the men are still cross-cutting south. The lode in rise in back of this level is worth 7s. per fathom. The stope and pitches throughout the mine continue to yield about the usual quantity of copper ore.—Grease's South Lode: We are pressing with all speed to intersect the lode east of cross-course.

GREEN HURTH.—Jas. Polglase, Sept. 13: The north end 44 is worth 1 ton per fathom. Nos. 1, 2, and 3 stopes in back of the 44 north are worth in the aggregate about 15 tons of lead per fathom. Rise in back of the 44 south is worth ½ ton per fathom. Stope in back of Standage level is worth 6 tons per fathom. Two other bargains are without change. Dressing going on as usual.

HARDSHINS.—Joseph Fleming, Sept. 14: We are putting new timber in the mine, the old timber having fallen down. We have the east end of the vein cleared, and there is very good ore so far as we have worked (23 fms.) nearly up to the boundary. We are now clearing out the rubbish in the west end, where so far as we have seen there is also good ore. We have a very good mine in the win, and if we were down into the Jaw limestone we expect to have good results.

HEALEYFIELD.—Jno. Trelease, Sept. 14: Since my last report all the operations, both underground and at surface, have been carried on in a regular manner. The Whitwell shaftmen are now in the bottom of the shaft. They have another cribbing to put in, and cut a ring around the shaft to take up the surface water, then sinking will commence. The rise in the main lode, at the Success level, still continues poor, but we hope for an improvement soon. I have set the north part of Eddy's rise, on String's, this week to a partnership of tributaries, at 45s. per bing; it is rather poor for stoping or tutwork. We have finished carting the ore to the siding yesterday. Since we placed the small fan at the Derwent level we have had a good supply of ore, but we find the level much broken, and very troublesome to secure. I hope to report better progress in this level soon.

HERODSFOT.—P. Temby, J. A. Temby, Sept. 20: Setting Report: The 215 to drive south by four men, at 70s. per fathom; the lode worth, as last reported, 15 cwt. of silver-lead ore per fm. The stope in the back of this level, south of No. 3 winze, to four men, at 45s. per fm.; the lode is worth 15 cwt. of silver-lead ore per fm. The stope north of No. 3 winze to four men, at 35s. per fm.; the lode is worth 18 cwt. of silver-lead ore per fm. Two stopes in back of the same level, south of No. 2 winze, to seven men, at 35s. per fathom; the lode is worth from 12 to 15 cwt. of silver-lead ore per fm. To rise and stope in back of the 190 north, by six men, on the western lode, at 50s. per fm.; the lode is worth 18 cwt. of silver-lead ore per fm. To stope north of rise by two men, at 50s. per fathom; the lode is worth 12 cwt. of ore per fm. The 175 to drive north, by four men, at 90s. per fm.; the lode is worth from 12 to 15 cwt. of silver-lead ore per fm. Two stopes in back of the level to six men, at 35s. per fathom; the lode is worth 16 cwt. of silver-lead ore per fm. The winze sunk below the 160 north is now communicated with the 175, and has caused a perfect ventilation in this part of the mine, and laid open a good run of ore ground, which will now be stoped away. To stope the back of the 70 north by two men, at 15s. per fathom; the lode is worth 8 cwt. of ore per fm. The 175 cross-cut to drive west by four men, at 180s. per fm.; we have not yet reached the lode, but are daily expecting to do so. The 117 to drive south by two men, at 60s. per fm.; lode small. Three men to tram the stuff throughout the mine, at 25s. per 100 skips. Two men to fill the stuff at 13s. per 100 skips. A new winze will now be commenced in bottom of the 160, about 40 fms. north of No. 1 winze, where the lode is large, and worth over 20 cwt. of ore per fm. We intend sampling two parcels of ore next week.

HINGTON DOWN CONSOLS.—Thomas Richards, Sept. 19: The 52 fm. level cross-cut south towards the No. 1 lode has been driven during the past week 4 ft., the ground at present is granite of a congealed character, and I expect we shall make greater progress as we get nearer the lode. The 40 east has been driven 3½ ft., total distance from the shaft 23 fms. 5 ft. 6 in.; the lode is of a very promising description, containing capel, quartz, arsenical munda, peach, &c., and continues to produce good stones of yellow copper ore.

KIT HILL GREAT CONSOLS.—Isaac Richards, Sept. 20: In the tunnel level the ground continues without any important alteration, and the distance driven during the past week is 2 fathoms.—North Engine-Shaft: The work in connection with casing and dividing the shaft, putting in skip-rod, &c., continues to proceed satisfactorily. In the 75 west the lode part carried 5 ft. wide, is composed of capel and quartz, with peach, munda, wolfram, and good stones of tin ore. The distance driven during the past week is 1 fm. 2 ft. In the 75 east the lode is 3 ft. wide, composed principally of capel and quartz. The distance driven during the past week is 4 ft. In the 62 east the lode is 2½ ft. wide, composed of capel and quartz, with peach, gossan, and a little tin ore.

LLANDEGLA.—H. Hotchkiss, Sept. 19: We have commenced driving out west upon the lode in the new shaft, which is very wide and mixed strongly with chert; water issues pretty freely from the end.

MARKE VALLEY.—W. George, Francis Renals, Sept. 20: We beg to hand you the following report of our setting on Saturday last: Salisbury Shaft: To drive the 90 cross-cut north, by six men, at 15s. per fathom. To stope the bottom of the 90, by four men, at 3s. 10s., where the lode will yield 2 tons of ore per fathom. To drive the 80 cross-cut south, by nine men, at 15s. per fathom; here, we are pleased to say, another branch has just been intersected of a most promising character, from 10 to 12 in. wide, composed of good quality copper ore, munda, and capels. The ground beyond being interspersed with copper and munda, with a stream of water issuing from the end would indicate there being more lode in connection with this; but if not we shall put a pair of men to drive on what we have already passed through as soon as convenient, but not to interrupt the progress of the cross-cut. To stop the back of the 8, by four men, at 3s. 10s., yielding 1½ ton of ore per fathom. There are 13 tributary pitches set to 20 men at 13s. 4d. in 1½.—Wheel Jenkin: Bellingham's shaft is being continued as per bargain previously set. To drive the 15 east, by six men, at 7s. per fathom; the lode here has been a little disordered during the past fortnight, but is now more settled and again producing good stamping work, and we expect will soon resume its former value. To stope the back of this level, by six men, at 4s. 10s.; worth for part carried 15s. per fathom. We have removed the men from the rise in the back of this level to resume the winze below the adit, which, having been drained by the rise, was in the end to nine men, at 11s., and is worth 15s. per fathom. We hope to get this communicated in about a month, which will give good ventilation to the level below.

MELLANEAR.—J. Gilbert, Sept. 19: There is no change in the 30 cross-cut driving south of Gundry's shaft; the ground is still presenting a very promising appearance. The lode in the winze sinking below the 60, on the south-east part, is yielding 1½ ton of copper ore per fathom. The ground keeps strongly mineralised with munda in the 70 cross-cut driving north from the main lode. The rise in the back of this level, west of shaft, is yielding 1½ ton of ore per fathom. The lode in the 100, west of shaft, is 5 ft. wide, and yielding 2½ tons of ore per fathom. In the 110, west of shaft, the lode is 5 ft. wide yielding 1½ ton of copper ore per fathom, and some saving work for tin. The ground is very much better for driving, and we are expecting a further improvement in the value of the lode. The lode in the 110, east of shaft, is 4½ ft. wide, composed of munda, some low quality tinstuff, and 1½ ton of copper ore per fathom. The rise in the back of this level is yielding 1 ton of ore per fathom; we are expecting every day to communicate this rise with the 100. In the 120, west of shaft, the lode is 4 ft. wide, and yielding 2 tons of ore per fathom. In the 120, east of shaft, the part of the lode carrying is 3½ ft. wide, and yielding 2 tons of ore per fm., but there is more lode in the north side, which is letting out a good deal of water, and we have put the men to strip it down to ascertain its value. There is nothing new in any other part of the mine. Our sampling for this month is computed to be 512 tons of copper ore.

MID-DEVON COPPER.—James Neill, Sept. 15: A Shaft: Water drained to bottom of 60. Machinery working slowly and doing good duty.—O Shaft: The stope in back and side of 50 east, was driven by two men, at 1s. in paying quantities. The cross-cut north from extreme end of 50, driven by six men and three boys, with rock-drill, has advanced 8 ft. The strata has been variable; in early part of week it was favourable for progress, then it became harder, at present it is easier and more congenial for the production of ore than I have hitherto seen it, small nests and streaks of which are disseminated throughout the drive.—Surface: Roadway around by water-wheel under rods has been lowered and widened as requested by Highway Board Committee, and the work along the line of rods is nearly completed.

MONA CONSOLS.—T. Mitchell, Sept. 19: The ground in the engine-shaft during the last few days appears to be undergoing a change, and getting more jointly. The lode continues of good width, and showing strong patches of copper ore. The men put on another pump on Friday last. The engine and pitwork continue to work satisfactorily.

MOUNT CARBIS.—W. Tregay, G. Johns, Sept. 20: The ground in sump shaft is favourable for sinking, and the shaft is being put down at good speed. The lode in the winze sinking in bottom of 50 is producing good stones of tin, worth 10s. per fathom for 8 ft. wide. We have commenced stoping in back of 50 where the lode is producing fair quality tinstuff. We have commenced stoping on the carbonate at the 38, and the stopes here are producing superior quality tinstuff, and promising for an improvement.

NEW CARADON.—N. Richards, Sept. 19: The men are preparing the shaft for putting down pitwork, &c. We have also made a new capstan, which is being fixed, after which we shall prepare and erect a new shears for sending down the work; and, having now succeeded in getting suitable munda, we have also got a quantity of materials on the spot, we shall commence building, loading, &c., in a day or two.

NEW TERRAS.—J. D. Fraser, T. Edwards, Sept. 20: We have cleared and secured the lobby-shaft to the water level, and are now driving west on the tin lode mentioned in our last. It appears to be large; but we have not yet cut through it; however, it contains rich stones of tin. Several of our men are busily engaged in removing and bringing on to our mine pumping gear and other machinery, which we have just purchased. All other operations are making satisfactory progress.

NEW TRUMPET CONSOLS.—R. Quantrell and Son, Sept. 20: Wheel Valls Lode: During the last week Trenethick shaftmen have been cutting plat and barrow-rod. We shall now be regularly driving the 28 west, and are expecting a further improvement in the end. In the 16 west we have been driving through some good copper ore ground since last report, the lode being worth on an average about 12s. per fathom. The stope in the back of this level is worth 10s. per fathom. The mine is opening out very well.

NEW VAN CONSOLS AND GLENN.—H. R. Vercoe, D. Douglas, Sept. 20: The lode in the 50, west of Gundry's shaft, continues to present the same favourable indications as last reported, and good progress is being made. There is no change to report in the character of the lode in the 50, east of Murray's shaft; but owing to the ventilation being bad, we are compelled to fix a fan machine and pipes. This will be completed in the course of two or three days, when the drive will again be resumed under more favourable conditions. The lode in the stopes is not so productive as it has been of late, but doubtless the lode is only temporary; at present the value is as follows: No. 1 stope, in the roof of the 40, west of Murray's shaft, yields 10 cwt. per fathom; No. 2 stope, in the roof of the 40 west, yields 12 cwt. per fathom. A cross-cut is being driven south in the 40 west, where we expect to intersect

SOUTH DARREN—Henry James, John Mitchell, Sept. 20: In the 130 east the lode is opening out wider and richer for lead; present width 8 in., and worth about 2 tons silver-lead ore per fat-ton. In the same level west there is a change to a red rock. The lode in the 120 east in the same level is small, and just opening for lead. About 100 ft. from the 120 east, the lode of barren ground to be driven through here before we get into payable ore ground again; and as the 110 is a good bit in advance we think it desirable to drive the 110 and leave the 130 idle for a while. No. 1 stop. In the 120 east, is worth 15 cents silver-lead ore per fat-ton. The 110 is a good bit in advance, and is worth 15 cents silver-lead ore per fat-ton. The 120 west the lode is small, and disturbed by a flat-joint; this has been the

The 170 cross-cut in the early part of next. The 160 fm. level is driving west of cross-cut, by six men, at 9¢. per fathom, where the lode is worth for tin 15¢. per fathom. It has two stopes working in the back of this level, by 12 men, at 10¢. per fathom. One of the stopes is driving west of cross-cut, by six men, at 10¢. per fathom, and the lode is worth for tin 5¢. per fathom, with indications of an improvement. The rise behind this end is worth for tin 15¢. per fathom, rising, by six men, at 8¢. per fathom. A winze sinking in the bottom, by six men, at 8¢. per fathom, is worth for tin 10¢. per fathom, and sinking to communicate with the stopes working in the back of the 160 level. The 150 level is driving west of cross-cut, by six men, at 10¢. per fathom, and unproductive, being still under the influence of the cross-course. The 137 is driving west of cross-cut, by six men, at 15¢. per fathom. This end

WHEELS ON UNCLE SAM'S CAR. Famously, W. Prophet, J. White, Sept. 29: All the preparative work is being done in Hind's engine shaft for sending down the heavy castings such as bed-casting, &c., referred to in our last report, but having considered the present capstan rope not dependable for sending down the work a new rope has been ordered, and we are expecting in the same daily, and no time will be lost in fixing as soon as it comes. The shaftmen in the meantime are working in the bottom of the shaft, and getting in order for sinking below. All the other points are being pushed with all speed.

The misrepresentation may, and does as a rule, appear on the surface; but there are those who refuse to recognise it. Fortunately such people form only a very small proportion of the British public, and their inactivity being so, and

is brought upon themselves by their imprudence, and cannot be wondered at; but the inactivity of these parties will be an important element in the history of the future. They are always quickly forgotten, and relegated to that oblivion from which they ought never to have emerged. It is stated that there are many speculators who are just now turning their attention to the produce markets as a suitable field for their ingenuity, and it would appear that the opinion is very general that a great improvement in the state of trade is at hand; but touching this and all other matters connected with business, we shall be able to form a more definite opinion when the holiday season is quite over.

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The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, SEPT. 21, 1883.

IRON.	£ s. d.	£ s. d.	TIN.	£ s. d.	£ s. d.
Pig, GND, f.o.b., Clyde...	2 6 1	—	English, ingot, f.o.b. ...	97 0 0	98 0 0
Scottish, all No. 1 ...	2 6 9	—	bars ...	98 0 0	99 0 0
Bars Welsh, f.o.b. Wales ...	5 7 6	—	refined ...	99 0 0	100 0 0
" in London ...	5 17 6	—	Australian ...	94 12 6	94 15 0
" Stafford ...	7 2 6	7 5 0	Banca ...	—	nom.
" in Tyne or Tees ...	5 15 0	5 17 6	Straits ...	94 12 6	94 15 0
" Swedish, London ...	9 10 0	9 15 0	COPPER.		
Rails, Welsh, at works ...	5 7 6	—	Tough cake and ingot ...	66 0 0	67 0 0
Sheets, Staff., in London ...	8 5 3	8 10 0	Best selected ...	68 0 0	69 10 0
Plates, ship, in London ...	8 10 0	8 15 0	Sheets and sheathing ...	73 0 0	75 0 0
Hoops, Staff., ...	7 0 0	7 5 0	Flat Bottoms ...	75 0 0	78 0 0
Nail rods, Staff., in Lon.	6 15 0	7 0 0	Wallaroo ...	68 10 0	—
STEEL.			Burra, or P.O.C. ...	68 0 0	—
English spring ...	12 0 0	12 0 0	Other brands ...	65 10 0	66 10 0
cast ...	10 0 0	10 0 0	Chili bars, g.o.b. ...	63 5 0	63 7 6
Swedish, keg ...	13 0 0	—	QUICKSILVER.		
bag, hnm. ...	15 10 0	—	Flasks, 75 lbs., wat. ...	5 7 6	—
Rails at works ...	4 10 0	4 15 0	PHOSPHOR BRONZE.		
" Light, at works ...	5 5 0	—	Alloys I, II, and IV ...	£114 0 0	—
LEAD.			" XI., Duro A, Duro B ...	113 0 0	—
English, pig, common ...	12 10 0	12 15 0	BRASS.		
" L.B. ...	12 6 13	2 6	Wire ...	63 4 0	—
" W.B. ...	12 6 13	7 6	Tubes ...	—	—
" sheet and bar ...	13 7 6	—	Sheets ...	73 0 0	—
" pig ...	13 7 6	—	Yel. met. sheath. & sheets ...	5 12 6	5 14 0
" red ...	13 7 6	—	TIN-PLATES.		
" white ...	13 10 0	20 0 0	Charcoal, 1st quality ...	1 10 0	2 0
" patent shot ...	15 15 0	—	2nd quality ...	0 19 6	1 0 0
Spanish ...	12 6 2	—	Coke, 1st quality ...	0 17 0	0 17 6
NICKEL.			2nd quality ...	0 16 0	0 17 0
Metal per cent. ...	—	—	Black ...	12 0 0	—
Ore 10 percent. per ton ...	—	—	Canada, Staff., or Gla. ...	12 0 0	—
Silesian, ordinary brands ...	0 0 15	5 0	at Liverpool ...	12 0 0	—
special brands ...	15 10 0	—	Black Taggers, 450 of ...	30 0 0	—
English Swansea ...	15 12 6	—	14 x 10 ...	—	—
Sheet zinc ...	19 0 0	—			

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; 1X 6s. per box more than 10 quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—During the past week our markets have mostly been steady; but, taken all round, the tendency has been fairly strong. As yet there is no improvement in the actual amount of business doing; but, at the same time, the prospects have decidedly brightened, and the long prevailing gloom has been succeeded by increased cheerfulness. After a lengthened state of quietude it is difficult to realise any sudden change for the better, but when we find that those features which in great measure have helped to dull the markets during their season of inactivity are being removed, or even partially removed, it is not too much to expect that some change for the better will quickly follow. There is now a plentiful supply of money, and consequently money is cheap, a circumstance which invariably induces buying of all metals, and encourages enterprise. Trade is opened up, the requirements increase, and business thus becomes brisk. Passing on to another favourable feature, the number of failures recorded for England and Wales last week shows a decrease compared with those for the corresponding week of last year, a feature which signifies that, notwithstanding the season of depression in China, we have some passing through, trade is being conducted upon a sounder, better, and more substantial basis, as the recent Bankruptcy Act purifies the commercial atmosphere to a very large extent, the tone of the markets is improved, and more confidence is being implanted. Again, another matter for unalloyed satisfaction is there seems a very good chance that the unfortunate difficulties that have for so long existed between France and China are now in a fair way of being adjusted.

Last week we pointed out some of the serious consequences that would be involved to the trade and to this country, had a long time past been slack, it is all with which we have to deal with here—it is with peculiar satisfaction that traders generally learn that the threatened antagonistic action of the two countries is likely to be dissolved, and peace in China is restored. Another point, too, which indicates the approach of better times is the fact that enquiries and even orders from India are becoming larger and more numerous; and as trade with that country has for such a long time been assigned both for the further develop, particularly with the present low range of prices that are now for the most part ruling. Lastly, the clemency of the weather generally prevailing during the past week must have been very propitious for the ingathering of the crops, and in consequence greater tone is implanted and less hesitation is evinced to do business. These are some reasons why a recovery in the markets may soon follow, and although at present they have had but little effect, yet that may be accounted for by the certain amount of slowness which usually characterises operators to make purchases after a lengthened season of depression; but they can scarcely fail to produce an ultimate influence, and that perhaps of a very important nature.

COPPER.—This market has continued quiet, and extremely steady. There is not much disposition evinced to do business, and little desire is shown to effect sales unless full prices are paid, hence quotations are nominally unaltered. Business in Chili bars has been chiefly done at 63s. 7s. 6d. for sharp cast parcels, and at 10s. to 15s. more for forward prompts. On Monday last, the Chili charters were announced at 3000 tons; but this quantity, although large, made little or no impression upon the market. Here, perhaps, we have some cause to be satisfied with the character of the market during the week, and reasons can be assigned both for the hesitation displayed by buyers to continue purchasing, and also for the indifference of holders to accept reduced rates. The deliveries during the first part of the month have been extremely large, showing that a good actual trade has been transacted, irrespective of what may have been done for speculation, and consequently holders think, with the recorded transactions of copper, both of the raw and manufactured material, they are entitled to improve rates.

On the other hand, with the repeated announcements of heavy charters, there seems no chance of the heavy supply being reduced, and therefore operators are slow to make purchases, and the whole market becomes neglected, and with these contrary influences at work, the favourable features about counterbalancing the unfavourable events, leaves the market unaltered. The bi-monthly returns on the whole are satisfactory, for with the exception of Chili bars they show very good deliveries for the first half of September, which must be considered very satisfactory after the excellent deliveries of last month. The deliveries of Chili produce, however, having been small, only 425 tons, the stock of

Chilian produce in first and second hands in Liverpool and Swansea, has been increased by more than 1000 tons, and amounted on Sept. 14 to 26,651 tons, against 25,538 tons on Aug. 31, the imports during the first fortnight of September having been 1473 tons. The imports of other kinds of copper for the same period were 2212 tons, and the deliveries 3160 tons.

IRON.—The market keeps quiet and unaltered, although it is a little irregular from the various strike difficulties which are constantly cropping up. It appears that no sooner are the difficulties arranged in one district than they crop up in another. For instance, the strike agitations in the Staffordshire districts have only just been practically and fully brought to a termination, and now there are agitations arising in Yorkshire for increased wages. It is said that the shipbuilding trade at Sunderland is paralysed by the strike dispute, whilst rumours are afloat that masters are endeavouring to arrange for foreign labour, and if such is the case the men may have to suffer a considerable amount of distress from their present action. Shipbuilding in other parts, however, is reported active, and also the demand for railway iron. Shipping orders are still limited, and it may be a matter of some surprise that the low prices fail to encourage exporters into the market. All descriptions are low in value, which ought to encourage the demand both for consumption and shipment. In some parts of the country, particularly in Staffordshire, prices, although still low, are nevertheless stronger, owing to the increased cost of fuel, and not from any better demand.

The advices which come to hand this week from Glasgow are not satisfactory, they show that the warrant market has been very quiet and prices easy, that shipments have been reduced both in comparison with the previous week and of the same week of last year, that an extra furnace has been put into blast, and that the public stock has been increased. Naturally with so many adverse features in the market prices are weak and the demand dormant, and speculators are not likely to give much attention to the market until some great change is effected in its statistical position. The demand for makers' iron is slow, and prices in sympathy with those for warrants are easier. After closing with a very dull tone last week the Glasgow warrant opened on Monday in a somewhat similar condition, and during the first two days of this week prices continued gradually to recede until 48s. 1½d. was accepted, while on Wednesday there was very little doing, and no change was made in quotations. Yesterday the market continued dull, and very few transactions were carried through, but prices were slightly easier, business chiefly being done at 48s. 1d. to 48s. 0½d., and the closing figure for this afternoon is 47s. 1d. per ton. The shipments last week were but 10,311 tons, against 10,902 tons for the same week of last year, being a decrease of 591 tons, and which makes the total shipment for the whole of this year 466,638 tons, against 450,193 tons for the same time of last year, and 412,576 tons for the similar period of 1881.

There is one extra furnace in blast, the total now being 115, while the public stock has been further increased by 171 tons, and now amounts to 585,060 tons, against 585,409 tons a week ago. The imports of Middlesbrough pig-iron into Grangemouth last week were 5555 tons, against 3905 tons for the corresponding week of last year, being an increase of 1650 tons, and which makes a total increase in the shipments for the whole of this year compared with last of 2854 tons. The meeting of the Iron and Steel Institute at Middlesbrough during the past week has tended to make business quiet in the Cleveland district, and transactions have been confined to very narrow limits, but deliveries to meet old orders are reported large, the shipments last week amounting to more than 22,000 tons. The public stock is now estimated at 70,071 tons, being a reduction of 1310 tons. With regard to prices, there is very little change, No. 3 being quoted at 39s. 3d. to 39s. 6d., while in special instances 39s. has been accepted. Forge iron is quoted at 37s. 6d. to 38s. 9d. There is no change in manufactured bars being held for 52s. 15s. to 54s. 17s. 6d.; angles, 52s. 10s. to 54s. 12s. 6d., and ship-lates at 54s. 17s. 6d. to 56s. 2s. 6d. per ton.

Advices from Wolverhampton report the market there as strong, and most descriptions are slightly dearer. The chief cause of the advance is a rise in the value of coal. Most descriptions show an advance of 2s. 6d. per ton, the present figures for angles being 52s. 5s. to 54s. 10s. Sheets are still very firm, at 52s. 10s. for doubles, and if, per ton more for trebles. Kettering prices are likewise strong, at 47s. 6d. per ton. For local stocking and consuming purposes at Birmingham there has been a rather better demand for most kinds of manufactured iron, and quotations for medium sorts of sheets and bars are somewhat higher, sellers in most instances refusing to accept last week's prices. In marked bars, however, there is no change, the present quotation still being 74s. 10s. per ton.

TIN.—This market has continued very strong, and prices have shown advances day by day. Although the demand has been more or less spirited, the rise has been of a steady nature by about 2s. 6d. to 5s. per ton per day; and, therefore, greater confidence is expressed in its stability. The demand is chiefly speculative, and, at the same time, a very fair business indeed is being transacted for consumption, and the returns for the end of the month may not unlikely again show good deliveries. The supplies of tin this year have been heavy both from Straits and Australia, when taken in comparison with the few previous years, while the deliveries, taken all round, have been rather less, and this materially tends to damp the tone; but no very great amount of importance is attached to it, as the difference is only slight, and an increased American consumption seems to be expected, by which stocks may be greatly reduced, and higher prices realised.

Whether the slightly better feeling which has characterised the market this week, and is the forerunner of still dearer rates it is impossible to say; but such is not improvable when we remember that the last statistics were favourable thereto, and any repetition of such satisfactory returns would, in all probability, bring about this result. It is certainly a time when hesitation may prove fatal, consumption is being maintained upon a large scale, stocks are being reduced, and the market is again attracting the attention of speculators. All these features point to the fact that the market is likely to be attended with fluctuations yet seems very probable, and confidence is freely being expressed in a considerable rise in the course of the next month or so. Now, however, it has barely commenced; but the tone has become more lively and animated, which is the general forerunner of a rise whether the advance be large or small, and under the circumstances it would appear that consumers would not do amiss by fully satisfying their wants.

SPELTHER.—The continental stocks having been worked off, and production, instead of increasing, as was expected, having rather decreased, prices have already stiffened, and will probably rise higher this autumn. We quote Ordinaries now at 15s. to 15s. 5s., and Specials at 15s. 10s. per ton.

LEAD. is quite unchanged, with sellers of Spanish at 12s. 6s. 3d., and buyers at 12s. 5s. English is quoted at 12s. 10s. to 12s. 15s. per ton.

STEEL.—Rails are unaltered both in price and demand. Last week sellers reduced the price of German to 9s. 12s. 6d. per ton.

TIN-PLATES.—Steadiness is still the principal characteristic of this market, and the demand is quiet for both charcoals and cokes.

QUICKSILVER.—Importers maintain their price, but sales from secondhands have been made at rather less money.

Messrs. HARRINGTON, HORAN, and Co. (Liverpool, Sept. 14)—Since our last issue a considerable business has been done in good ordinary brands at 64s. to 65s. cash, and 64s. 10s. to 64s. for three months' prompt, while choice brands realised 64s. 17s. 6d. to 84s. 12s. 6d. per ton. A very good business too has been done in manufactured copper and yellow metal for India. The market to-day for Chili kinds is flat at our quotations. We are without any news of charters for this fortnight. The sales of furnace materials comprise 14,000 tons pool; 100 tons Mexican ore to arrive at 12s. 9d. per unit. At Swansea: 3280 tons yellow Quebrada ore at 11s. 9d., 1189 tons Quebrada regulus at 12s. 3d., 65 tons Norwegian ore at 12s. 3d., and 1200 tons Cape ore to arrive at 12s. 6d. to 12s. 7½d. per unit. Precipitate: 750 tons Huella at 12s. 6d., 74 tons Mason's Spanish at 12s. 6d., 250 tons English at 12s. 9d., and 25 tons rich Rio Tinto at 13s. per unit. Import of Chili copper during the past fortnight 1478 tons, against 911 tons same time last year; delivery, 425 tons fine, against 1431 tons same time last year. Import of other copper during the past fortnight 2212 tons fine, against 1073 tons same time last year; delivery 2160 tons fine, against 1477 tons fine same time last year. Arrivals here during the fortnight of West Coast, S.A., produce—Galicia, from Valparaiso, 335 tons bars, 180 tons ingots; Antarctic, from Lota, 983 tons bars. At Swansea—nil. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	—	455	17,913	536
Swansea	—	3,573	6,390	—
Total	—	4,028	24,303	536
Representing about 26,651 tons fine copper, against 25,538 tons 31st ult.; against 22,620 tons Sept. 15, 1882; 23,388 tons Sept. 15, 1881; 33,882 tons Sept. 15, 1880.				
Stock of copper contained in other foreign ore and Spanish precipitate, 3647 tons fine, against 1888 tons Sept. 15, 1882. Stock of Chili bars and ingots in Havre, 2047 tons fine, against 2805 tons Sept. 15, 1882. Stock of Coro Coro Barilla in Havre, 100 tons, against 15 tons Sept. 15, 1882. Stock of other copper than Chili in Havre, 470 tons fine, against 285 tons Sept. 15, 1882. Stock of Chili copper afloat and chartered for to date, 11,203 tons fine, against 11,850 tons Sept. 15, 1882. Stock of foreign copper in London, chiefly Australian, 4000 tons fine, against 7346 tons Sept. 15, 1882.				
According to the Board of Trade Returns the total imports and exports into and from this country for the first eight months of the following years were:—				
IMPORTS.				
Copper in ores	Tons	9,105	8,583	8,585
Copper reg. and precipitate	18,489	18,208	22,498	—
Bars, cakes, and ingots	20,034	22,442	22,540	—
In pyrites, estimated	9,558	11,152	11,002	—
Total	57,186	60,385	64,625	—
EXPORTS.				
English copper—wrought & unwrought	Tons	21,623	18,200	21,193
Foreign copper—unwrought	9,395	7,881	8,289	—
Yellow metal	9,745	12,328	12,967	—
Total	40,763	38,407	42,454	—

COPPER AND TIN.—Messrs. FRY, JAMES, and Co. (Sept. 22) write:—The steady condition of copper prices, and the total absence of speculation, are the only features of this article. There is a moderate daily demand for home consumption and export, whilst supplies are well maintained. Tin is very steady in value and in demand, the recovery of price noted in our last having been more than maintained.

GOLD AND SILVER.—Messrs. PIXLEY and ABELL (Sept. 20) write:—The influx of gold to the Bank, although not so large as last week, continues, that establishment having received 111,000l. since our last circular, as against these receipts may be mentioned the withdrawal of 90,000l. for Egypt. The arrivals

comprise 22,000l. from the Brazil, 14,840l. from Australia, = 37,840l. The Moella has taken 23,950l. to the West Indies, and the P. and O. steamer 12,000l. to Bombay and 30,000l. to Alexandria. The value of silver has improved since our last, and 50½d. may now be quoted. Buyers at this rate. The arrivals have been rather small, and the demand for the East has been sufficiently active to cause this rise. The arrivals have been 75,000l. from New York and 45,000l. from Brazil = 120,000l. The P. and O. steamer has taken 117,000l. to Bombay.

There has been rather more activity in the MINING SHARE MARKET this week, and, as speculators return to town from their holidays, increased business may result; and as so many stocks and shares have been greatly depressed of late through various accidental and adverse circumstances, bargain hunters may have a choice of ventures at low prices. It has been somewhat remarkable, however, this week that several orders for particular shares could not be executed. A few weeks ago buyers could be found for them with great difficulty. This week there have been several buyers and no sellers.

The chief demand has been for Bratsberg, Gunnislake (Clitters), and transactions have taken place in Dolcoath, East Pool, Wheal Crebor, West Crebor, Prince of Wales, South Caradon, West Kitty, Roman Gravel, and a few others.

TIN.—No alteration has been made in standards for ore since Aug. 2, and there is not much doing in tin mines. Blue Hills, ½ to ¾; Carn Brea, ½ to ¾; Cook's Kitchen, 23 to 25. Dolcoath, 6½ to 67; at the meeting in Cornwall the accounts from April to August showed sales of tin 842 tons, realising 46,254l. 11s., and a profit on six months' working of 8239l. 19s.; balance from last account, 959l. 11s.; sale of 201 shares, 13,434l. 17s.; and it was decided not to declare a dividend, but that the balance be placed towards the payment of 25,000l. to Mr. Basset for the new lease, half of which had been paid on Aug. 16. The report states that the engine-shaft is sunk 13 fms. below the 364, the lode for the last 2 fathoms sinking for the length of the shaft is worth 260l. per fathom. The total points in operation in the mine are valued in the aggregate at 87½ per fathom, the ends alone being worth nearly 400l. per fathom.

East Pool, 40 to 41; East Blue Hills, 4s. to 6s.; Killifreth, 1½ to 1¾; New Kitty, 1½ to 2½; North Blue Hills, 2s. to 3s.; Polrose, ½ to ¾; South Condorow, 8 to 8½; South Frances, 8½ to 9½; Tincroft, 7 to 7½; West Basset, 4½ to 5; West Kitty, 13½ to 14; West Peavor, 3½ to 4; Wheal Agar, 14 to 1½; Wheal Basset, 4 to 4½; Wheal Grenville, 6 to 6½; Wheal Kitty (St. Agnes), 1½ to 1¾; Wheal Uny, 2½ to 3; North Penstruthal, ½ to ¾; Tressavean, 6s. to 8s.; Mounts Bay, 4s. to 6s.; New Trumpet Consols, 1½ to 1¾; Phoenix, 1½ to 2; South Crofty, 6½ to 7.

COPPER.—At the Cornish Ticketing, on Thursday, the standard for ore declined 5s. The average price of the ore sold was 3l. 8s. 6d. per ton. Produce, 6½; standard, 97l. 14s. There is rather more doing in copper shares. Bedford United, 1½ to 1¾; the sale of ore here—121 tons—realised 486l. 7s. 6d. Devon Great Consols, 2½ to 3½; the sale here—959 tons—realised 2019l. 16s. 6d. Gunnislake (Clitters) advanced from 1½ to 1¾. The sale here brought 2190l. 18s. for 401 tons. The shares have been in demand, owing to an improvement in the 188 east. Devon Friendship, 3s. 6d. to 4s. 6d.; the 46 west is worth 12l.; the slope in same level 11l. A slope in the 30 is worth 1 ton of copper ore per fathom; another, 6l. Stridridge, 2s. to 3s.; they appear on the eve of intersecting the lode in the 40 cross-cut. South Caradon (Limited), par to ½ prem.; the south part of the lode has been intersected here, worth 1½ ton of good ore per fathom. This is important, being in advance of the course of ore in the 160. The late company drove upon the north part of the lode at the 140 for 25 fathoms, and abandoned it, as it was unproductive. The present company put out a cross-cut south, and have thus found the ore. The sale of ore on Thursday—210 tons—realised 1023l. 17s.

Prince of Wales, 8s. to 10s.; the mine is improving in two or three important points, notably in the 102 east, 102 west, and the 90 west, each producing rich stones of sulphur ore. The sale of ore (123 tons) realised 248l. 0s. 1d., 65 tons being burnt leavings only. Marke Valley, ½ to ¾; the sale here realised 242l. 12s. Mellanear, 3 to 3½; New Caradon, 4s. to 6s.; South Devon United, 3s. to 5s.; West Crebor, 4s. to 6s.; West Gonamena, ½ to ¾; West Seton, 10 to 12. West Caradon, 7s. 6d. to 10s.; the sale of ore (105 tons) brought 536l. 17s. East Caradon, ½ to ¾; the sale here (45 tons) brought 214l. 17s. 6d. New West Caradon, 4s. to 5s.; the ore (20 tons) brought 3l. 17s. 6d. per ton. Wheal Crebors have been in better request, and leave off 2½ to 2¾. South Penstruthal, 1½ to 1¾; the agent writes:—“We have struck the lode and cut into it about 4 ft. So far as seen is composed of quartz, capels, fluor-spar, with good stones of copper intermixed; a very kindly-looking lode.

LEAD mines continue dull, and prices merely nominal. Vans are quoted 4½ to 5; the mine continues to look well in the 120 west. Good progress is being made in Edward's shaft with the rock drill. Great Laxey, 15 to 16; Tankerville Great Consols, 2s. to 4s.; a full report will be issued next week; the lode in the bottom of the 175 at Bog has improved to 3 tons per fathom. South Darren, 12s. 6d. to 17s. 6d.; the 130 east is worth 2 tons of silver-lead ore per fathom, and several of the slopes are reported well off. D'Ereby Mountain, ½ to ¾; the lode continues worth 3 tons of lead ore per fathom. Weardale, 1 to 1½; the mines operated on by the company are opening out very satisfactorily, especially Bolt's Burn and Grove Rake. East Rose, 7s. 6d. to 10s.; Leadhills, 2½ to 2¾; Old Shepherds, 7s. to 9s.; Great Holway, 5 to 5½; Sinclair, 25s. to 27s.; Coed-y-Fedw, 24s. to 26s.; Roman Gravel, 6½ to 7½.

FOREIGN MINES.—The amount of business doing is far more satisfactory, and quotations are decidedly better supported. Akankoo are quoted ½ to ¾, but the price is quite nominal; Alamillos, 1½ to 1¾ ex div.; Almada and Tinto, ½ to ¾; Anglo-African Diamond, 2 to 3; Arizona, 2½ to 2¾; Asia Minor, ½ to ¾; Australian, 2½ to 3. Bratsberg, 2½ to 3½; the dividend warrants will be issued next week, and a special meeting is to be called to alter some of the Articles of Association to comply with the requirements of the Stock Exchange. California Gold, ½ to ¾; Callao Bis, ½ to ¾; Cape Copper, 49 to 52; Cape of Good Hope Diamond, ½ to ¾; Central Jagersfontein, ½ to ¾; Chile Gold, ½ to ¾; Chontales, ½ to ¾; Colombian Hydraulic, ½ to ¾; Colorado United, 1½ to 2½; Copiapó, 3½ to 3¾; Devala Moyar, ½ to ¾; Eberhardt, ½ to ¾; Fortuna, 2 to 3½ ex div.; Frontino and Bolivia, 1½ to 1¾; General Mining, 5½ to 6½; Indian Consolidated, ½ to ¾; Indian Glenfold, 1-16th to 3-16ths; Kapanga, ½ to ¾; Lake Superior Native Copper, ½ to 1; La Plata, ½ to ¾; Linares, 3 to 3½ ex div.; Marbella, 2½ to 3; Mason and Barry to bearer 1½ to 15; Mysore Gold, ½ to ¾. Michipicoten, ½ to ¾; the lode in Thames shaft continues productive.

New Emma, 1½ to 1¾; Nouveau Monde, 5-16th to 7-16th; Organos, ½ to ¾; Panulillo, 6½ to 6¾; Potosi, ½ to ¾; the directors received telegram from Trinidad on Thursday:—“No information from Peru. Between 100 and 200 ozs. of gold remitted on Sept. 2.” The secretary adds that considering the stoppages and delays always incidental to new machinery this return is probably the result of very few days' working, the mill having only commenced on Aug. 7, and the clean-up for remittance being on Aug. 18. Quebrada, 7½ to 8½; Rhodes Reef, 1-16th to 3-16th; Richmond, 5½ to 6½; Rio Tinto bonds, 101 to 103; ditto, shares, 20½ to 21½; Ruby and Dunderberg, 1½ to 1¾; Scottish Australian, 2½ to 2¾; Sierra Buttes, 1½ to 1¾; South East Wynaad, 1-16th to 3-16th; St. John del Rey, 90 to 100; Tharsis, 6½ to 6¾; Tolima, 5 to 6; United Mexican, 5½ to 5¾.

to say, the capital not to be touched by the vendors—is at the bankers, the necessary funds will be readily obtained.

Our usual telegram from Cornwall this evening states: In the Cornish share market comparatively little business has been transacted this week. Inasmuch, however, as there has been an improvement in the price of tin, and the Dolcoath and Tincroft lease questions being practically settled, it is felt that a better tone is likely to prevail. The 25,000l. Mr. Basset claimed for renewing the Dolcoath lease has been paid, only about 2000l. being borrowed of the bankers. In the case of Tincroft, Lord Robartes is being largely praised for consenting to the payment of dues on a sliding scale according to the price of tin. At Redruth yesterday 2221 tons of copper ore were sold at the Ticking, realising 7582l. The standard declined 5s. At Carn Brea next week a call will be made and also at Wheal Tincroft meeting, to be held a fortnight hence. Dolcoaths close at 67; East Pool, 40½; Cook's Kitchen, 24½; West Kitty, 13½.

Roper's Patent Life-Saving Raft Company has been formed, with a capital of 50,000l., in shares of 1l. each, to purchase for 25,000l. (of which 15,000l. is taken in fully paid shares and 10,000l. in cash) the invention of life-saving rafts and apparatus patented by Mr. Richard Roper, which has received the sanction and high commendation of naval and scientific authorities, as affording the readiest method known of saving a large number of persons collectively in case of shipwreck, collision, or fire at sea. It appears that the annual loss of life at sea in British and Colonial vessels at home and abroad now reaches nearly 4000, and it is claimed that very many of these lives might have been saved had even a few of the vessels been fitted with efficient life-saving rafts, such as these now brought forward, which are capable of adaptation as captain's bridge, poop deck, forecastle deck, deck-house roof, &c., and are at all times available as self-floating rafts in case of foundering, or can be launched over the side of the vessel in a few seconds. The rafts are constructed of wood, steel, or iron, and are fitted with water-tight seats, capable of holding stores, provisions, water, &c., sufficient for a protracted voyage. One self-launching raft, fitted as a captain's bridge, of a size estimated to be capable of carrying 40 persons, with provisions, water, &c., weighs only about 6 tons; and complete with fixed standards, &c., about 15 tons; whereas eight ships' boats, such as carried by large steamers, will weigh, with davits, fittings, &c., over 50 tons, and will only carry 250 people, the cost of such boat being three times as much as the cost of such bridge. A modified form of this raft could be fitted to coasting vessels, fishing smacks, yachts, &c., which would thereby not only greatly reduce the loss of life on our coasts, but would materially aid the efforts of the life-boats in rescuing the crews. The invention can also be adapted for transport vessels as troops, horses, guns, stores, and cargo can be shipped or landed by its aid. It is proposed to charge a royalty on all the rafts made, and a yearly royalty on vessels using the same. Taking the total number of vessels registered under the Merchant Shipping Acts, belonging to the United Kingdom and British possessions as 38,000, with a tonnage of over 8,000,000, if the rafts were fitted to 5 per cent. of these vessels at an average yearly royalty of 5l. the income therefrom would be 9500l., or nearly 20 per cent. of the nominal capital of the company. There are, say, about 1000 new vessels built yearly in the United Kingdom. It is believed, too, that the income to be derived from working the foreign patents which have been applied for will also be considerable.

Devon Great Consols, 3½ to 3½, and said to be more enquired for. The monthly sale of copper ores (959 tons) realised at the Cornish Ticking, on Thursday last, 2019l. 16s. 6d., being an increase of over 600l. on the previous month's sale, some of the ore realising 5l. 10s. 6d. and 6l. per ton. The lode in the 130, eastward of Incline shaft, is 4 ft. wide, and yielding 6 tons of mineral per fathom.

Devon Great United, 3½ to 3½, and reported in demand, owing to a good improvement in the 120 east (near Devon Consols), valued at 1 ton of copper ore per fathom, and an excellent discovery having taken place during the week in the 120 west, where the lode has increased from 2 to nearly 4 ft. wide. This lode, which last week produced good stones of ore, has gradually improved to 3 tons of good quality copper ore per fathom.

Drakewalls, 3½ to 3½; it is satisfactory to observe that the shaft has been cleared to the 90, and that every effort is to be made to reach the bottom level as soon as possible.

Kit Hill, 3½ to 3½; better progress has been made in driving the Tunnel level, 12 ft. having been driven during the past week. In the 75 west the lode for the part carried is 5 ft. wide, a kindly looking lode, producing good stones of tin ore.

South Caradon, par to 3½ prem.; an important improvement has been reported in the 140 where in driving a cross-cut south, the south part of the lode has been met with, worth 1½ ton of good quality ore per fathom. This is considered to be a continuation of the shoot of ore now being worked on in the 160. The sale on Thursday realised 1023l. 17s.

South Devon United, 3½ to 3½; a favourable report as to the present developments and future prospects of the property has been received from the mines.

South Wheal Frances, 9 to 9½; it is announced that there is a considerable improvement in one of the ends, but there is no fortnightly report to show how the mine is looking.

Weardale, 1 to 1½; good progress is being made in the company's mines, especially at Bolt's Burn and Grove Rake Mines, where the ends are rapidly improving, and presenting altogether a satisfactory appearance.

West Wheal Seton shares have fallen to 11l. each, but we do not hear that there is any falling off in the mine to account for this. At the same time, it would be desirable if the agent was to send a report for particulars.

Michipicoten, 3½ to 3½; a report from the Superintendent, Capt. Opie, is considered very satisfactory, as it shows that the lode in Main's shaft continues unchanged.

Almadá and Tinto, 3½ to 3½; a long report has been printed for circulation among the shareholders. It is stated that in Guijas the average yield of the ore where they have encountered the ledge 270 ft. below surface is 3 tons per fathom of 35 Troy ounces per ton; but they consider the prospects sufficiently encouraging to warrant the outlay of thoroughly proving the bottom of the mine, as the discovery of a small bunch of such ore as this mine has previously yielded would greatly increase the dividend resources of the company. The local traditions are all corroborative of the richness of this mine, which runs almost parallel with San José.

California Gold, 3½ to 3½; the mill run this week was 370 tons, yield 660l.; smelting ore sales, 320l. The weekly telegram also stated that the shafts have again been started, and that the 1400 east carries a splendid lode. The week's report states that the lode also in the new 1450 level west is of a fine character, being 3 ft. wide, strong, and well-defined, yielding 7 tons of ore per cubic fathom; whilst the same amount of ore is being turned out from the stopes of the 1300 west.

Colorado United, 2½ to 2½; a better demand has been reported during the past week on the improvement in the lode in the 13th level, referred to in the report from the mine. It is a satisfactory feature to note, writes a competent correspondent, that although the lode varies in its production, it is holding down in depth and improving in width, a winze in the 13th level producing from 6 to 7 in. of mineral. This mine is an instance of the variability but continuity of all true lode mining; in fact, so continuous has the vein been in this instance that it has provided from time to time the necessary funds that have been required to sink to the 1300 without any working capital. The 13th level has now reached a point east where it is calculated that it will meet with a rich ore shoot coming in from the Dundeeberg and East Terrible. The situation of these different ore shoots being so well known, it will now be a comparatively easy matter to extend the levels so as to meet them, there being a vast difference in the expense of driving or extending levels compared with that of sinking. In the new ground which has been opened this year upon the Fenton there appears to be a strong lode opened up for 125 ft. which will doubtless, when stoping is commenced, add materially to the returns.

Kobinoor and Donaldson, 3½ to 3½; the agents' report regular progress. The 520 west, at the Champion, still holds out well, and the 400 east is opening up stoping ground, yielding fair grade milling material. The machinery at the leased mill is being removed to the new mill, the Frue vanners also to follow later.

Richmond, 5½ to 6½; the week's run was \$17,000 from 290 tons of ore, with one furnace. During the week the refinery produced doré bars to the value of \$15,000. The superintendent's report on the present condition and extension of the prospecting and dead-work for the week ended Aug. 27 states that the 300 north-west drift from south-west drift into cave—cross-cuts east and west, 12 ft. each, have been run from the end of this drift, and a small quantity of ore extracted with a view to ascertain its probable dip. The 1050 north-west drift from above has been run 20 ft. Total 55 ft. On fissure in limestone. The 1050 east drift from north-west drift (No. 1) has been run 22 ft. Total 216 ft. On fissure in limestone. The 1050 intermediate drift (on fissure from rise to 900 winze) has been extended 15 ft. Total 115 ft. In limestone. This drift exposes some considerable red line in which two cross-cuts have been run, one north 5 ft. into the wall of the fissure, and the other south 10 ft. into hard limestone; two raises have also been made on these indications, one south-east 10 ft. and the other south 14 ft.

Ruby and Dundeeberg, 1½ to 1½; the week's report advises a falling off in the value of the ore shipped, but it also says that the pre-

sent workings are in one of a better quality. An incline from the bottom of the shaft to prospect the ore body had been commenced, and good results are looked for; this will obviate the necessity of sinking the shaft. The telegram this week advises a great improvement in the quality of the ore as compared with the last two or three returns.

Asia Minor, 3½ to 3½; advices have been received of a further shipment of 54 tons of ore to Liverpool. The total shipments during the month of August amount to 492 tons of silver-lead ore.

In Lead Mine Shares there has been considerably more business doing, the fact that lead has not further declined, taken in connection with the upward movement in tin and copper being regarded as indicating the general improvement in the Metal Market which some have so long predicted. Vans are quoted 4½ to 4½; the 120 west improvement still continues, and this portion of the mine is looking very promising. The rock-drills are expediting the sinking of Edward's shaft, and good progress is being made therein.

Roman Gravel, 6½ to 7½; the several levels driving south continue to open out well. The general meeting will be held at the mines on Oct. 4.

Tankerville, 4s. to 5s.; it appears that the lode in No. 12 pit below the 175 west in the Bog portion of the mine has improved from 2 to 3 tons per fathom. The other points are about the same as at last report. A general meeting of shareholders will be held on the mine on Oct. 3.

Goginan, 3½ to 3½; advices from Wales, under Thursday's date, state that the new discovery in the 70 west continues to look satisfactory. So far it has been driven on for over 7 fms. in a fine lode, which the managers describe as being quite equal to anything they ever expected to find and it maintains its productiveness in a striking manner, producing between 1½ and 2 tons of silver-lead ore per fathom. This discovery is in the bottom level of the mine and consequently of great importance to the future of the undertaking.

At the Stock and Share Auction and Advance Company's sale, on Thursday, the prices among others obtained were:—Civil Service and General Store (11. fully paid), 16s. 9d.; Cheque Bank 10l. shares (5l. paid), 35s.; London and Provincial Electric Lighting and Power Generating, 10s.; the United Horse-Shoe and Nail, 8s.; Tregentrees and Old Polgoth Consols, 1s.; Victoria Dwellings Association, 2s. 6d.; Jabochoff Electric Light and Power, 27s. 6d.

The half-year's interest due on Oct. 1 on the Windsor and Annapolis Railway Company's 6 per cent. A Debenture Stock, and 4 per cent. B Debenture Stock, will be paid on and after that date at the company's bankers in London. Notice is given that the annual meeting of the stockholders of the Louisville and Nashville Railroad Company will be held at Louisville, Kentucky, on Oct. 3. The director of the Mauritius Land Credit and Agency Company have decided to pay on Sept. 29 an interim dividend for the half-year ended June 30 of 3s. per share, being at the rate of 15 per cent. per annum.

At Truro Ticking, on Thursday, 2221 tons of ore of 6½ average produce, and containing 140 tons 2 cwt. of fine copper, were sold for 7582l. 8s., being 3l. 8s. 6d. per ton of ore, 10s. 10d. per unit, or 54l. 2s. 5d. per ton of fine copper in the ore, and an average standard of 97l. 14s. Subjoined are the particulars of the two last sales.—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
8-pt. 6	836	96 13 0	6½	£3 5 0	13s. 5½d.	52 6 6
20	2221	97 14 0	6½	3 8 6	10 10	54 2 5

Compared with the last sale the decline has been in the standard 5s., and in the price per ton of ore about 4d.

HOME MINES TRUST.

In a circular issued to the shareholders on Tuesday the Chairman, Mr. George Forman, says:—The time having come round when you will naturally expect a communication from the directors, it affords them much pleasure to be able to address you again under equally favourable circumstances as heretofore.

The transactions for the past half-year have been very numerous, and in some cases the dealings have been highly remunerative, while the dividends received from some of the investments have proved most satisfactory. The board have endeavoured to carry out the principle of spreading their investments over a large area of both dividend-paying and progressive mines, and have by this means avoided the risks consequent upon embarking heavy sums in any one property.

The general result has been of so satisfactory a nature that the directors have resolved to declare an interim dividend at the rate of 20 per cent. per annum, less income tax, payable on Sept. 29, which is the same rate of distribution as last time—13 per cent. dividend and 5 per cent. bonus. Although it is impossible at the present time for the directors to make a positive forecast as to the dividend for the coming half-year, yet they can with confidence say that they believe that it will be equally good, and that some thousands of pounds will be added to the reserve fund.

BRATSBURG.—We are informed that the dividend warrants will be posted next week. A special meeting is also to be called for the purpose of altering several of the Articles of Association as required by the Committee of the Stock Exchange, to whom application has been made for an official quotation. The shares are in considerable demand at about 2½l. to 2½l.

NORTH HERODSFOT.—At the meeting on Sept. 15 (Mr. F. F. Wilson in the chair) the accounts showed that the company had current assets 536l. 13s. 8d. to meet liabilities 831l. 2s. 2d. It was resolved to sell the machinery and materials, either with or without the company's interest in the leases. The secretary was directed to invite tenders for the sale of the mine as a going concern, and failing to obtain these to offer the effects by auction. A meeting to confirm the resolutions and make a call was held on Oct. 2.

CORD-Y-FEDW AND PANT-Y-BUARTH.—The ore is now appearing at the 100, and it is considered likely that a similar discovery will be made here as at the 90; if so, the mine will, it is said, be of much greater value than at any time before.

COPPER ORES.

Sampled Sept. 5, and sold at the Royal Hotel, Truro, Sept. 20.					
Mines.			Mines.		
	Tons.	Price.		Tons.	Price.
Devon Great Consols.	118	£1 13 0	South Caradon	30	12 14 0
ditto	105	1 3 0	ditto	16	12 14 0
ditto	101	1 13 0	Prince of Wales	65	0 0 0
ditto	100	1 9 6	ditto	31	3 6 0
ditto	99	1 11 6	ditto	24	2 9 6
ditto	96	1 11 6	ditto	3	22 5 6
ditto	83	1 11 6	Bedford United	86	3 17 6
ditto	73	1 9 6	ditto	35	4 7 6
ditto	58	5 10 6	Holmbush	72	3 4 6
ditto	48	1 9 6	ditto	25	1 13 0
ditto	38	4 5 6	ditto	16	4 4 0
ditto	36	6 0 6	ditto	2	12 12 0
ditto	4	13 10 6	West Caradon	65	5 13 6
Gunnislake (Clitters).	87	5 10 6	ditto	40	4 4 0
ditto	83	5 4 0	Marke Valley	36	2 19 6
ditto	79	5 12 0	ditto	33	2 13 0
ditto	78	6 0 6	ditto	31	1 11 0
ditto	74	4 19 0	East Caradon	31	4 15 6
South Caradon	74	3 9 0	Phoenix	22	7 19 6
ditto	48	6 0 6	New West Caradon	20	3 17 6
ditto	42	3 9 0			
TOTAL PRODUCE.					
Devon Great Con.	959	£2019 16 6	West Caradon	105	£536 17 6
Gunnislake (Clit.)	401	2190 18 0	Marke Valley	160	242 12 0
South Caradon	210	1023 17 0	East Caradon	45	214 17 6
Prince of Wales...	123	248 0 0	Phoenix	22	175 9 0
Bedford United	121	495 7 6	New West Caradon	20	77 10 0

TOTAL PRODUCE.	
Mines.	Tons.
Devon Great Con.	959
Gunnislake (Clit.)	210
South Caradon	210
Prince of Wales	123
Bedford United	121
Holmshush	121
Average standard.	97 14 0
Average price per ton	£3 8 6
Quantity of ore	2221
Amount of money	£7582 8 0

LAST SALE.—Average standard, 96 13 0; Average produce, 97 14 0; Standard of corresponding sale last month, £101 8 0; Produce, 5½s.

COMPANIES BY WHOM THE ORES WERE PURCHASED.		
Names.	Tons.	Amount.
Vivian and Sons	537	£2204 19 3
P. Grenfell and Sons	492	1652 7 9
Nevill, Druce, and Co.	470	1775 7 0
Williams, Foster, and Co.	544	2003 1 0
Mason and Elkington	178	546 7 6
Total	2221	£7582 3 0

NO SALE on Thursday next, Sept. 27.

Copper Ores for sale on Thursday week, at Tabb's Hotel, Redruth.—Mines and parcels.—Mellancor 512—West Tolgus 110—Wheal Coates 70—New Cook's Kitchen 45.—Total, 767 tons.

AMERICAN MINING EXHIBITS AT THE AMSTERDAM EXPOSITION.—Mr. A. Zeelandelaar, the Commissioner in charge of the magnificent mineral collection from the great mining centres of Utah, Montana, and Idaho has since the award of the diploma of honour returned to London, where he will remain for some days.

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See Selected List published by S. JAMES, 14, Angel-court, London, E.C.

SPECIAL BUSINESS in the following order:—
5 Bedford United, 29s 6 100 North Herodsfot, 5s. 40 California Gold, 15s
50 Blue Hills, 7s. 100 North Penruthal, 15s 100 Canadian Cop., 11s. 3
20 Carn Camborne, 18s 40 Old Shepherds, 9s 9d 100 Callao Bis, 9s. 9d.
10 Carn Brea, £8½. 25 Phoenix Uni., 40s. 50 Chile, 13s.
5 Cook's Kitchen, £26. 40 Penhalls, 7s. 6d. 40 Chontales, 6s. 6d.
40 Collicombe Cons., 11s. 75 Prince of Wales, 8s 9d 100 Columbia Hyd., 6s.
200 D'Eresby Mount, 7s 9d 15 Sortridge, 2s. 3d. 40 Co. So. Austr. Cop.,
20 Devon Consols, £23½. 20 So. Caradon, 2s. 9d pm 9s.
30 Devon Friend-ship, 4s. 30 So. Condurru, £2½. 20 Don Pedro, 2s.
5 Drakewalls, 4s. 6d. 20 South Darren, 12s. 6d. 25 Eberharit, 5s.
5 Dolcoath, £57. 20 So. Devon Utd., 4s. 9d 100 Flagstaff District, 3s 6
80 East Blue Hills, 5s. 10 South Frances, £9. 20 Frontino, 3s.
5 East Botallack, 16s. 20 So. Penruthal, 32s 6 5 Gold Coast, 11s. 9d.
50 East Caradon, 6s. 15 Tincroft, £7½. 100 Hoover Hill, 4s.
50 East Wheal Rose, 9s. 6 40 Treavean, 7s. 6d. 50 Indian Consol., 3s.
10 Frongoch, 11s. 9d. 45 Tanker, Gt. Con., 3s 9 40 Indian Glenrock, 2s 9
25 Goginan, 6s. 5 West Basset, £5. 100 Kobinoor B., 10s. 6d.
10 Great Laxey, £16. 175 West Caradon, 2s. 6d. 40 La Plata, 13s.
20 Great Holway, £4½. 20 West Crebor, 4s. 9d. 25 New Emma, 33s. 9d.
5 Gunnislake Clit., £2½. 15 W. Devon Gt. Con., 3s 50 Nouveau Monde, 7s.
40 Herodsfot, 5s. 40 West Gonamena, 6s 20 Organos, 15s.
100 Home Mines Ltd., 10s 6 10 West Kitty, £14. 50 Orta, 13s. 6d.
20 Killfret, 3s. 20 Wheel Basset, £4½. 10 Potosi, 10s. 9d.
25 Kit Hill Gt. Con., 2s. 6 30 Wheel Coates, 3s. 3d. 50 Port Phillip, 3s. 6d.
16 Kitty St. Agnes, 2s. 3 20 Wheel Crebor, £2½. 25 Ruby & D'berg, 31s 3
10 Langford, 2s. 6d. 10 Wheel Pevor, £2½. 50 Topcilla, 7s. 6d.
20 Marke Valley, 17s. 6d. 100 Wheel Sisters, 6s. 3d. 25 Tumbacherry, 7s.
25 Mounts Bay Con., 6s 6 20 Victoria Gold, 11s. 6d 20 Victoria Gold, 11s. 6d
20 New Kitty, 39s. 100 Asia Minor, 12s. 20 West Callao, 14s.
40 North Busy, 6s. 3d. 10 Almadá and Tinto, 11s 10 Bratsberg, £2 13s. 3d. 40 Wynad Presov., 2s. 6

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ROYAL MINING ACADEMY AT CLAUSTHAL (PRUSSIA).

72ND SCHOLASTIC YEAR, 1883-1884.

The LECTURES of the WINTER HALF-YEAR will COMMENCE on the 9th of OCTOBER, 1883.

Programmes to be had (gratis) on application to—

THE DIRECTOR,
BERGRATH DR. V. GRODDECK.

Notices to Correspondents

RUSSELL COPPER MINE.—I, like "L. S. D.," should be glad of some information about the Russell Copper Mine (late South Wheel Creek). I bought shares in the old company, and directly after their funds were exhausted, and a reconstruction took place. I have paid three calls in the new company, and have notice of the fourth, which I decline to pay until I hear something more about the new company, which I think in justice to us ought to give a report of what has been done.—T. Tipton.

TECHNICAL EXAMINATIONS.—"Post Tertiary" (Pontypridd).—If your object be to pass with a view to become a Certificated Manager, the Government Inspector for your district will give you all necessary information. If it be a certificate from the Science and Art Department that you require, write to the Secretary, South Kensington. The reason no correspondent answered your enquiries on Aug. 4 is probably because they convey the idea that you consider it practicable to study the advanced before the elementary portion of a subject, and as this would ensure failure in every examination, information would be of no value.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—"J. A." (Owens College).—We do not know that the Association is declining. This year's meeting was not so large as usual, it is true, but the comparatively small attendance, about 300, is accounted for from the place of meeting being so far west, Minneapolis in Minnesota, and from the railway companies running there being less liberal than those providing accommodation in former years. Some excellent papers were read, but we do not know what local paper gave abstracts. Science published at Cambridge, Mass., U.S., contains a full account; it could no doubt be obtained through Messrs. Trübner, Ludgate-hill.

FRANZESBURY MINES.—In the letter of Mr. W. Nines in last week's Journal, ninth and eighth line from bottom, "The ancient fort" should read "The ancient fort." As, however, the reference was to the relic of a parish church, fortunately most readers would guess what was intended. We regret the error, nevertheless.

CARBONITE.—"R. F." (Barnesley).—It is a natural coke. Dr. Rosseter Raymond, of the New York Engineering and Mining Journal, read a paper upon it.—On the Natural Coke of Chesterfield County—at the June meeting of the American Association of Mining Engineers. When we receive the Transactions we will publish an abstract.

CALLAO BIS (Venezuela).—About two months ago a brilliant report from the manager of this mine appeared in your valuable Journal, stating, amongst other things, that the great lode was within 6 ft., and when struck the mine would be one of the most successful existing. Since then not a word either from the manager or the directors has been vouchsafed to the shareholders. I should be glad to know how long it generally takes to get through 6 ft. of ground.—A. B.: Leyton.

MINING JOURNAL.—"R. H.," "J. S.," and others.—The sole and complete reply to many enquiries, similar in character, is that there will be no change whatever in editorship or management in consequence of the death which we were sorry to announce last week. Not a single change is even contemplated either in the staff or as to the other employees, and the Mining Journal will be conducted precisely as heretofore. The deceased had never upon any occasion written a paragraph, article, or other communication for the Journal during his long connection with it.

CORRESPONDENCE.—All business letters should be addressed to "The Editor," or "The Manager," and not by name to individuals. Private letters should not be sent to the office at all, as it must be distinctly understood that all letters received are, however they may be addressed, regarded as connected with the business, and opened accordingly.

Received.—"R. H.," "J. F.," "M. B. G.," "E. H.," "T. L.," and "J. H. J.": Thanks—Cautious (Comparison of Prices): As you have neither signed your own name, nor adopted a pseudonym, it is obvious that you have not much to fear, either that you will "lose caste," or that anyone will "raise an action against you on subject of false quotations."—"J. D. W." (Monogram on Envelope): No notice can be taken of unauthenticated letters. Moreover it would be equally logical to say that of the two shares compared the one should be 6l. higher, or that the other is too high by a corresponding amount. On the face of your communication you appear to wish to sell the lower priced shares at 20l. each; if so we can insert an advertisement to that effect on receipt of your order and remittance—"J. B. M." (Swansea): Thanks; shall be handed on—"J. W. H." (Higham Ferrers): No quotations are inserted without authentic statements that transfers have been registered at the prices.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, SEPTEMBER 22, 1883.

MINE AND FACTORY INSPECTION.

The annual "Parliament of the Working Men of the Country," or, in other words, the Trades Unionists, have just concluded their labours, and in many respects it must be considered eminently satisfactory. When it is stated that this Union now numbers close upon a quarter of a million of members (247,600) it is at once evident that their deliberations must exercise a most potent effect either for good or evil upon the whole relationship of commercial life. No body can deny or dispute the right of the working classes to sit in solemn convocation and deliberate as to how best to promote their own interests; but there is the danger of so "patting" and pampering the working classes as to make them somewhat too arrogant in their demands, and to be oblivious of the claims of the employers and capitalists. Some few years ago these Trades Unionists meetings were looked upon with a good deal of suspicion, as calculated to foment antagonistic feelings between the employer and the employed. And there was only too good ground for this feeling of suspicion; but happily those days have passed away, and the proceedings are now watched with friendly interest by the country generally, and many who formerly most vehemently denounced these assemblies are now amongst their warmest supporters. This change in the feeling of the country generally towards the Trades Unionists is entirely due to the spirit of moderation and fairness which have characterised the proceedings of late years, and the fact that the working classes have been taught, and are still being taught, by sad and dearly-bought experience that the interests of both employed and employer are identical, and that one cannot be prosperous whilst the other is antagonistic.

Of the 247,600 members who now compose the Trades Unions, no less than 42,000 are connected with the Amalgamated Iron and Steelworkers' Societies, and 36,000 connected with the coal mines, while many more thousands come in the category of those working in various factories. When, therefore, this immense body of men almost universally demand any one particular thing, as in their opinion best calculated to promote their own interests, it must have a powerful influence upon the Legislature. No Government, whatever its political opinions, can turn a deaf ear to the demands of such a body of men, who, whilst respectful in their language, are terribly earnest in pressing home their claims.

But these Trades Unionists naturally argued from their own standpoint, and advanced views, which a little serious consideration would show to be superficial, if not altogether opposed to the great object which all have in view. It is in our opinion much to be regretted that the per contra side of increased Government inspection was not placed before this immense body of working men. We give them every credit for sincerity of motive, and would bow with some degree of deference to the opinion expressed with so much heartiness and unanimity; but we question altogether the policy of the step they would adopt, or the wisdom of still further increasing the number of Government Inspectors, which, as a natural sequence, would lead, not necessarily to greater safety, but to a greater interference with trade and commerce. If there is to be an addition to

the number of colliery and factory inspectors the number must be so increased as to render it comparatively easy for every colliery and factory in the United Kingdom to be periodically and systematically visited at least three or four times a year. The number of Inspectors would have to be at least trebled if not quadrupled. Would the Unionists consent to such an enormous increased expenditure, an expense of which they themselves would have, indirectly, to bear a very large proportion? What with the host of Inspectors and officials our collieries and our great manufacturing industries and factories are already sufficiently heavily handicapped in the race of competition with other nations. The enormous cost of officialism tends directly to cripple trade and industry in every department, and deprive people of employment. Political economists see in all this officialism, obstructions, loss of time, and regulations, many of them most absurd and expensive, which act as so many shackles on trade and commerce, which, instead of being increased and tightened, should be relaxed, if not altogether removed.

But, would any additional number of Inspectors secure the objects which the Unionists profess to have in view. We think not. The whole tenor of the observations made by the Unionists lead to the assumption that colliery proprietors are altogether indifferent to the safety and lives of the working colliers, and that it is absolutely necessary to coerce the proprietors with more pains and penalties. We take the liberty of differing altogether, and in the most emphatic manner, against any such insinuation. The colliery proprietor is vastly more interested in the safety of the mine than the collier, and every properly regulated mine has far more precautionary rules and provisions enacted for the saving of life than the working miner cares to carry into effect. We undertake to say that colliery accidents, fatal and otherwise, more often occur through the gross indifference, or worse, the criminal neglect and recklessness of the collier, than any *laches* on the part of the proprietor. But not only are the owners naturally solicitous for the safety of their men, but an explosion or an accident is, on the mere pecuniary consideration, one of the most expensive things which could possibly happen, involving, it may be, the loss of thousands of property and the suspension of the whole operations of the pit. The proprietors, therefore, are upon every ground anxious to secure the best and safest means of working, and they require no more vexatious Parliamentary enactments nor extra official inspection to induce them to continue the necessary steps for the protection of their best interests.

But would more Government inspection bring about any improvement? Would it not beget indifference, perhaps neglect, on the part of proprietors or their managers? If the number of Inspectors, either of collieries or factories, are to be largely increased, as suggested, would not the tendency be to make these Inspectors responsible for the safety of the mines or factories? This would unquestionably be the arguments used by owners and managers in endeavouring to shirk the onus which now very properly rests upon them? Is this desirable? We think not. The safety of our mines and factories—the lives of all engaged therein—are too sacred to be risked by any such divided responsibility as sought to be imposed. The working of our collieries and our factories are already hedged round about with sufficient barriers and restrictions, and no case has been made out for further interference. Our "maternal governments" are vastly solicitous for the rights of the lower or working classes, and this patting and pampering has led to most extravagant demands, which, unless checked, will lead to results never contemplated. The claims and rights of the proprietors and owners should have some little consideration, and, before fresh demands for the forging of additional claims be made, let the collier and the operative see to it that he carries out more strictly the obligations which the Legislature has also imposed upon him.

MINERALS AND MINING AT THE AMSTERDAM EXHIBITION.

At the great International Exhibition now open at Amsterdam there are numerous exhibits of interest to the mineralogist and the speculator. The exhibition is sub-divided into five great departments—colonial, general exports, the fine arts, the arts applied to industry, and scientific lectures and meetings. In a separate building devoted to the Dutch colonies, which are admirably and instructively represented under the direction of the Hon. M. P. Peis, are numerous cases containing specimens of tin and other minerals, together with detailed accounts of their discovery, value of probable quantity, &c. The colonies of Victoria and New South Wales are also large exhibitors of gold, tin, shale, coal, &c., but by far the best display comes from that vast nursery of great things, America. Occupying a space of 25 square metres in the main gallery of the principal building may be seen over three tons of specimens of minerals as choice as they are varied from the great mining centres of Utah, Montana, and Idaho, in charge of Mr. A. Zeelandelaar, the Commissioner appointed to represent these territories. This admirably displayed collection is quite unique, and is admitted to be the best of its kind ever exhibited. The prime object of this attractive display is not to show the beauty of the ores, which are found in such abundance in the localities named, as to give Europeans some idea of the economical and commercial value of the minerals. Among the 400 mines represented from Montana and Utah principally—very few being from Idaho—the products of which are here represented, the specimens include gold, silver, copper, lead, quicksilver, tin, asbestos, iron, coal, bismuth, antimony, granite, slate, and marbles in nearly all the colours of the rainbow. The display is surrounded daily by experts of almost all nationalities, who have the benefit of a carefully prepared description in three different languages of each of the minerals, together with the assay, commercial, and marketable value. Mr. Zeelandelaar is also provided with the sworn assay value by the mineowner, and the name, history, and district in which each mine is situated, name of the county, direction of the ledge, with the length of all of the deepest so far as discovered, formation of the foot and hanging wall, average commercial value of each ore, various modes of treatment with smelting processes, depth, and description of underground developments, &c. It is evident that such a description cannot fail to be of great value, not only to the mineralogist who wants to know something of the geological history of the mine, but also affords the capitalist and investor an opportunity of studying the intrinsic value of the different mines with the view of obtaining a profitable employment for his capital. The produce of precious metals in Utah last year were of the value of over 1,500,000l. sterling, Montana nearly the same, and Idaho about one-half, the value of the same metals produced in the territories west of the River Missouri in 1882 being over 19,000,000l. sterling. Bearing in mind how little these immense states have yet been developed these figures are very suggestive of the vast treasures that must still lie buried there. What is wanted is better facilities of intercommunication and transportation, with more capital at command, and more experience in reducing ores; and, doubtless, these difficulties will be largely overcome by the opening up of the country by railroads.

Another interesting feature of the exhibits mentioned is that the

whole process of working the ore is shown from its raw state to the solid ingot. Some of the specimens are so rich as to almost take the form of nuggets, while others, though dull in appearance, are scarcely less valuable, and are representative of some of the best paying mines, a striking illustration of this paradox being the Horn Silver Mine of Utah, which has paid in dividends in 15 months 300,000l.; the Ontario with about 1,000,000l. sterling in 87 dividends; and the Crescent, of Park City, paying in July last 12,000l. as a first dividend. This mine is located on the Pinyon Hill, and promises to be a second Ontario. Then for Montana there is the Parrot, owned by a private company, with a monthly dividend of 6000l., one of the finest mines in Butte, with 300,000l. of ore in sight; the Lexington, owned in Paris, declaring in July 44,000l. dividends on six months' working; the Alice, with a gross produce in seven months of 140,000l. (dividend expected shortly); the Drum Lumon, sold in London for over 1,000,000l., with it is estimated double that value of ore in sight; the Bell, in Butte, one of the most promising mines in the Territory; the Shoubar; the Moulton, with about an equal output to the Alice; the Cable, one of the finest gold ledges in existence; and the Anaconda, with equally rich copper ledges. As a copper producing district, Butte, Montana, will it is predicted some day startle the mining world, and rival Lake Superior. The different formations of some of the mines as exhibited at Amsterdam present an inexhaustible study.

In some places in Utah and Montana gold ore crops out at the roots of the grass, mixed with silver, silver with iron, and iron with copper, while in other parts the pure copper glance ledge crops out and gets richer in silver as the mine is developed in depth. In some of the specimens exhibited pure gold and silver may be seen in the form of leaves or wire, and in others the black sulphurets, valued at 3000l. per ton, look like charcoal. The silver sandstone of Utah is also a great curiosity, the common sand being impregnated with silver, assaying from 8l. to 50l. per ton. The Barbee and Walker, the Stormont, and the Christy are the principal silver sandstone mines now at work in this part of the country. Even petrified wood yields there 6l. to 8l. of silver per ton. Some of the specimens of antimony exhibited in the crude state shows 71 per cent. of pure metal. In these western territories marbles are found equal to the choicest Italian, but lie undeveloped for want of capital, and the same may almost be said of iron ore that will yield 60 to 70 per cent. of metal. Of the samples of coal mines exhibited from Utah, some of them contain 60 per cent. of pure carbon, and are nearly equal to the best anthracite. This alone could be made one of Utah's staple productions, while south of Utah there are mountains of sulphur purer than the best Sicilian, a fact which the Governments of Europe do not seem to be fully aware of, or they would certainly turn their attention to it. While those who are best informed are unable to give anything like an approximate idea of the probable mineral wealth of the country, all seem to be pretty well agreed that there is enough salt to put the world in pickle.

This elaborate collection of exhibits is accompanied by maps, plans, and the finest collection of photographs in the Exhibition, and which are of great assistance in illustrating the undeveloped resources of the Far West. The commissioner in charge, who is intimately acquainted with the resources of the country, and is well posted up in everything appertaining to mining and its difficulties, is not at all dismayed by the cold shoulder that is given by English capitalists at present in some quarters to American mining investments. On the contrary, he is of opinion that the greater the difficulty experienced in placing these properties in London the more satisfactory will be the ultimate result, for the country will not have to suffer for the floating of "wild cat" schemes or worked-out mines at a high figure, as has been the case. He is pleased to see that English capitalists and investors are becoming more careful in the selection of enterprises, and believes it will result in a healthy revival of confidence in American mining, which now seems to be a little shaken. He regards it as little short of fraud to buy a mine in America for 500,000l. and float it here for three times that amount, although some large margin should be allowed for the cost of transfer. In Utah and Montana he says mining is in its infancy from a mining point of view, and that he knows of thousands of claims lying idle for the past 10 years or more, the owners of which would gladly give a good share of the mine for a small working capital of from 10,000l. to 15,000l., which could be utilised to the benefit of all concerned. Struggling as it is under the loathsome ban of Mormonism this territory is severely isolated as a field for the investment of capital, whereas mining property is as well protected there as in any other State or in England. Thanks to the power of the Gentile population the security offered by the mining districts is best shown by the large increase in the output of bullion from year to year. In Montana alone last year the production of gold and silver was \$7,995,000. The receipts from Utah on account of United States Internal Revenue taxes have averaged \$43,237-50 a year for the 20 years ending June, 1882. For the last fiscal year they were \$48,512. No spirituous liquors are manufactured, nor any tobacco. In no other State or Territory are the taxes so moderate. Utah has five daily, twelve weekly, and two semi-weekly papers. It has a population of over 160,000, and no State offers greater inducements to the enterprising capitalist. The output of the principal mines last year was about \$10,000,000.

In conclusion, Mr. Zeelandelaar's advice to intending investors is to send out experts to survey and make full enquiries before investing, and the more thorough the investigation the better will it be for all parties concerned, some properties being better than represented here. According to one of the leading mining papers in America, of the hundreds of millions of money invested in American mines for the last 30 years careful calculation shows over 25 per cent. profit on the capital invested. With proper investigation of mining property before purchasing, and with economical management in English hands mining can be conducted on as legitimate a basis as any other business. The awards at the Amsterdam Exhibition were officially declared on Saturday last, and we are informed that a diploma of honour—the highest award given—is the result of the International juries' inspection of this magnificent collection of minerals.

NEW IRON INDUSTRY.—Of late great changes have taken place in the manufacture of iron and steel, so that no important fresh addition to the new processes was expected. But this appears not to be the case, for the production of a new material, likely to be in extensive request, has been patented by Mr. THOMPSON, who has taken extensive premises at Derby, belonging to Mr. Alderman Higinbotham, for the purpose of producing it, owing to the central position and the railway facilities for transporting it to any part of the kingdom, including the seaports. The new manufacture—vitrified iron—is well adapted, amongst other purposes, for shipping and for use in breweries, and is intended to supersede corrugated iron. Manufactures are also being opened out for the production of the new material in Glasgow, and at Dartford, in Kent; whilst the erection of extensive works in Paris is also in contemplation. So far as Derby is concerned the necessary work for altering the premises is to be pushed forward without delay, so that no great time will elapse before the manufacturing operations will be commenced, and those connected with the undertaking are most sanguine as to the results, both as to the material itself and the profits as well. The establishing of a new industrial enterprise, which promises to be of considerable magnitude, in Derby, is hailed with the liveliest satisfaction by the inhabitants, as the decline of some of the old industries will to some extent be counterbalanced by this latest addition to them.

INVENTION OF GAS LIGHTING.—As interesting to those curious with respect to the history of inventions, a correspondent of the Times writes:—It is stated by Jars, a well-known writer on mining and metallurgy, that when he visited Workington, in Cumberland, in 1765, fire-damp (commonly known as marsh-gas or light carburetted hydrogen) was conveyed from the old workings of a coal-pit to the surface by an iron pipe, and that when the gas was ignited at the mouth of the pipe, which did not exceed 1½ in. in diameter, it "burned perpetually," producing a bluish and feebly luminous flame, like that from spirit of wine, about 1 ft. in height. He adds that a short time previously, at Whitehaven, fire-damp had been conducted in a like manner from a coal-pit to the surface, and "the manager

proposed at that time to the magistrates of the town of Whitehaven to carry separate pipes from the pit into each street of the town, and by that means light all the streets during the night." ("Voyages Métallurgiques," 1774, I., p. 247.) This is a very early, and, as far as I know, the earliest published proposal to apply gas to the lighting of a town. If the proposal had been carried into effect, the result, I need hardly remark, would have been a failure, so far as concerns illumination.

SCOTCH PIG-IRON WARRANT MARKET.

Mr. W. WILSON (Glasgow, Sept. 20) writes:—The lower level to which iron warrants have fallen is bringing out some buying orders. A very large business was done during last week, but still chiefly for trade account. The agitation among the miners will probably result in an increase of wages, which must add still further to the unprofitableness of ironmaking. One seldom sees the coal and iron industries in such contrast as they are at present, the former enjoying a prosperity it has not known for years, while in the latter the late low range of prices can barely be maintained. The shipments of Scotch iron are a little disappointing, and come somewhat short of the figures for last year. 116 tons were put into store here last week, while 1010 tons were taken out at Middlesbrough. A furnace has been lighted at Lumphinnans, making the total blowing 115. Business was done during the past week at the following prompt cash prices:—

Thursday, Sept. 13.	Friday, Sept. 14.	Monday, Sept. 17.
46/4, 46/3, 46/4, 46/5...	46/4, 46/5, 46/4, 46/5...	46/4, 46/2
Tuesday, Sept. 18.	Wednesday, Sept. 19.	Thursday, Sept. 20.
46/1, 46/4, 46/2, 46/1...	46/1	46/1, 46/5
Price of Scotch Warrants, Sept. 17.	1833.	1832.
Furnaces in blast in Scotland do. ...	115	109
Iron in store at this date.....	586,043	627,932
Shipments of Scotch pig-iron for	10,311	10,902
week ending Sept. 15	10,311	14,449
Do. since beginning of year	469,038	457,193
Price of Middlesbrough, No. 3, Sept. 17	36/10 5/8	44/3
Furnaces in blast Middlesbrough dist.	117	120
Middlesbrough Iron Imported at	5,555	3,905
Grangemouth, week ending	5,555	2,335
Sept. 15	190,040	161,499
Do. do. since beginning of year	190,040	210,667

THE MERSEY TUNNEL.

The members of the South Staffordshire Mining Institute, and of the Manchester Geological Society, visited Liverpool on Wednesday, for the purpose principally of inspecting the Mersey Tunnel Works. The party was under the leadership of Mr. J. S. Martin and Mr. Alexander Smith, M. Inst. C.E., and the fine weather contributed much to the day's enjoyment. After the reception at the offices of the Mersey Tunnel Works, by Colonel Beaumont, the inventor of the tunnel-boring machine, Mr. Prentice (representing the contractor, Mr. Waddell), and other gentlemen, at once proceeded to visit the tunnel works on the Cheshire side of the river. The tunnel-boring machine at work was the great object of interest. The headings of the tunnel will be completed, it is anticipated, shortly after Christmas. A length of 600 yards remains to be executed, and this will be done at the rate of about 150 yards per week, the machine driving 120 yards and hand labour at least 30 yards per week. The tunnel proper descends at gradients of about 1 in 30 from the Liverpool and Birkenhead sides respectively, to near the centre of the river, where for a space of 550 yards the boring is practically level. The drainage heading reaches each end of the level portion, and serves to dry the tunnel by taking the water from the points of intersection with the tunnel to the pumping stations, which are situated, one at Birkenhead and the other at Liverpool.

On each side of the river access is obtained both to the drainage heading and the tunnel by separate shafts, those for the tunnel being used only for the purpose of construction, whilst the drainage shafts are fitted with powerful pumps, which bring water to the surface at the rate of about 3500 gallons per minute. The pumping power will, however, very soon be largely increased. The distance across the river, from quay to quay, is 1232 yards. The drainage level on the Lancashire side is being driven by hand, and a distance of 210 yards has been completed, whilst on the Birkenhead side the drainage heading is being made, as above stated, by Colonel Beaumont's boring machine, and has now reached a distance of 420 yards under the river. At the present rate of progress the centre of the river will be reached before the end of October. The tunnel proper has been completed ready to receive the ballast and rails for a distance of 650 yards on the Liverpool side, and of 800 yards on the Birkenhead side, including the construction of the stations at Hamilton-square and James-street. The blue bricks used for lining the tunnel are made by Mr. Hamblet, at Westbromwich.

The boring machine has thus far done its work admirably. It cuts the rock without the use of explosives, which is its great recommendation. As has been stated in previous notices, it is driven by compressed air, the air being supplied from blowing engines of ordinary construction situated in the yard of the works. The air pressure when the machine is at work is 35 lbs. to the square inch, and is conveyed to the front through cast-iron pipes 4 in. in diameter. The supply of air necessary to work the machine is amply sufficient to keep the heading in a proper state of ventilation, and this no matter at what distance the machine may be from the surface. The air in the heading of the Channel Tunnel when the boring machine was 2000 yards from the shaft was perfectly fresh. The rock now being bored through under the Mersey is in the pebble bed of the triassic formation, and is considerably harder than ordinary sandstone. The party left the tunnel works after the inspection, and proceeded to the Alexandra Dock, where the splendid Guion liner, Alaska was lying, on board of which they were hospitably entertained.

LIBRARIANSHIP.—The governing body of Columba College, U.S., have, says the Athenaeum, resolved to institute a new School of Librarianship, and to award diplomas of efficiency in connection therewith.

LONDON TO CALCUTTA IN A WEEK.—An interesting description of a proposed new junction railway intended to unite the railways of Europe with those of India, and which will so accelerate communication between the Eastern and Western worlds that by its aid we shall be enabled to travel from London to Calcutta in a week has been prepared by Mr. John Bourne, C.E., the principal of Muswell Hill Engineering College. The design of the railway is, it appears, due to Sir Macdonald Stephenson, by whom the Indian system of railways was inaugurated, and who, so far back, as 1850, brought the project under the consideration of Lord Palmerston, and, backed by his influence, under the notice of the principal courts of Europe, as an undertaking that must one day be proceeded with, being the necessary complement of the Indian system of railways about that time begun. In 1874 Mr. Bourne had accompanied Sir Macdonald Stephenson to India to commence the works of the East Indian Railway—the first line constructed in India, and which has since reached a high measure of commercial success—and he has since, in conjunction with Sir Macdonald Stephenson, collected all necessary information regarding the commerce, population, productions, trade routes, topography, geological formation, and mineral wealth of the countries intervening between Europe and India, so as to ascertain what were the physical difficulties which would be encountered in the construction of the proposed junction railway, and what the prospects were of a remunerative return. The European system of railways is now complete or being completed up to Constantinople. The Indian system is complete up to Sibi on the road to Candahar, and the junction link now proposed between these two points, and which would be 3000 miles long, or of the same length as one of the railways across America, would run from Constantinople through Angora, Sivas, Van, Tabreez, Teheran, Meshed, Herat, and Candahar. The time, it is believed, has now arrived for utilising the laborious research continued during so many years. A new and a faster route to India has become necessary. Railways ramifying over the face of Europe and over the face of India have now been constructed, which will collect and distribute the traffic of the connecting trunk, and with such aids the through traffic, it is believed,

will be large. Every railway in Europe, and every railway in India, is interested in the construction of this junction link, and measures, we are informed, are now being taken for carrying out the undertaking without further delay.

THE IRON MOUNTAINS OF LAPLAND.

In the course of inspection of the country to be traversed by the Northern of Europe Railway Company's line from Lulea to the Ofoten Fjord, in Norway, Mr. JAMES WILKINSON collected a large amount of information, which he has supplied to the Telegraph concerning the part of Lapland which his party traversed, and which is practically unknown. Lulea, he says, is a town of about 4000 inhabitants, situated at the north-west end of the Gulf of Bothnia, with a very large timber trade. It has a fine situation and a good natural harbour, and vessels of large tonnage frequent it. Vegetation is luxuriant, and most northern plants thrive there. The country is well cultivated and thickly populated. At Ljusa saw-mills have been erected, and great forests of noble pines begin here, and stretch, with but slight intermission, for 140 miles north. About nine miles north of Ljusa—at Lapproek—a fine iron mine exists. It took 28 men to carry our luggage, which consisted of a tent, about 400 lbs. of food, &c.; about 40 lbs. being the load of a man, so that we experienced great difficulty in properly sub-dividing the luggage. The men were excellent specimens, clean, strong, hard-working, and obliging. We passed Lakatrosk, Mortberg, Marjek, Ammtkaski, and arrived at Nattavara on Aug. 1, on the Arctic circle. This is a large village, inhabited by Lapps, where we found clean, comfortable quarters. By making a heavy forced march the next day we arrived at 2 A.M., on Aug. 3, at Gellivara, having accomplished 35 miles in the day.

Over the whole distance, from Gellivara to Lulea, 140 miles, to be traversed by the railway, there are great valleys of sand and gravel and occasional boulder stones, and the work of construction will be light. On ascending hills in the vicinity as far as the eye could reach was one ocean of forest, in which there was a great absence of animal life, and but little game. The Gellivara Mountain is entirely composed of very rich iron ore, hundreds of feet thick, above ground, and covering many square miles. Some of the ore has been carted in the winter to the Gulf of Bothnia. The railway will go round the mountain, and no mining will be required, as the iron can be blasted in the open, and put into trucks. On August 4 we arrived at Lake Tjantjas, where Finns reside. We had some few miles of rough ground to traverse up a narrow valley, and the tall fir trees end here, to be succeeded by birch. The next day we arrived at Killinge, having passed Panki Lake, seven miles long, with seemingly few fish in it, and only one miserable Lapp family settled on its shore. The country between Panki Lake to the great iron mountain of Kirunavara is very flat, and at a distance of 40 miles this wonderful peak of solid metal was visible. Its top looks like burnished steel in the sun, as there is no covering of earth to hide the brilliant metallic lustre. At mid-day on August 7 we stood on the top of this mass of magnetic iron, 850 ft. above the level of the lake.

The mountain is several miles long, and is estimated to contain about 280,000,000 tons above the water of the lake, and is of a richness of about 98½ per cent. of peroxide of iron. No mining is necessary to win it, and it ought to be put into railway trucks for 2s. per ton. The mountain is about 85 miles from the proposed Atlantic harbour. The only sign of life on the mountain were two grand eagles. Four miles north-west from Kirunavara we stood on the summit of the sister iron mountain Luosavara, also 850 ft. above the lake. This is a gigantic deposit of the purest ore, and equally rich. There is a great valley dividing the mountains through which the railway will pass. At Kurrovara there are numbers of rich farms worked by Finns, who grow fine barley and hay, and have numerous cattle. There is no population after leaving Kurrovara till the Norwegian Fjord Rombakken is reached.

On Aug. 12 we started from the end of the Torne Lake at 2 A.M., and, after a severe walk, we reached the waters of the Atlantic at 1 A.M. the following day. The scenery is very fine on this portion. We followed the valley right up to the Norwegian frontier, through gravel deposits mostly; but on passing into Norway we were on a tableland (1700 ft. above the sea) of smooth granite, which continued for some miles. The descent at the end of the Rombakken Fjord of 1500 ft. is most dangerous and full of loose stones, and it took us nearly two hours to make. The country is capable of supporting a large population, and on the completion of the railway ample work will be ready for them.

REPORT FROM CORNWALL.

Sept. 20.—Dolcoath has hardly met expectation. When it was originally agreed to devote the current profits to the payment of the balance of Mr. Jasset's fine it was certainly thought that the six months' working would do this, and leave something to the good, instead of being nearly 3000l. behind. However, we may hope that the drawbacks are now over, and that next account not only will dividends be resumed, but substantially. As to the charges brought by Mr. Rule against the management, we are quite at a loss to see what good result is to be expected. Whatever modicum of truth there may be in them the way in which they are made is such as to deprive them of all weight and practical value.

Tincroft adventurer appears to be quite satisfied with the arrangements made for their new lease, and though we cannot help regretting still that better advantage was not taken of the opportunity, we are not at all prepared to deny that a real step in advance has been taken. A sliding scale is affirmed, and a term granted of 25 years instead of 21—the latter a point of very great importance. As we suspected, the "slimes" difficulty, when fairly faced and properly examined turns out to be no difficulty at all; and all these minor details are left with entire satisfaction and confidence on both sides to the arbitration of that veteran authority, Mr. T. S. Bolitho.

Sundry hitches in connection with the trials of rock-borers and pulverisers at the Polytechnic meeting—the failure of a steam-pipe and the want of a continuous water supply—prevented the arrangements from being carried out precisely as originally proposed; and the rock-borers were eventually tested at East Pool, and the pulveriser trials carried on until Monday. The delay thus caused has prevented the preparation of the report of the judges so early as was anticipated, and it has not been made public at the time we write.

The seventh annual Exhibition of the Mining Institute, which opens at Redruth on Tuesday next, bids fair to surpass all its predecessors in the extent and value of its exhibits, the entries including many articles which are wholly new to the country. Among other matters safety catches are likely to have great prominence. A number are entered from other mining districts, and among those who exhibit locally are several of the best known and most skilful mining agents and engineers, who know by experience exactly what is wanted and what are the difficulties in the way of the application of any plan. Particular attention has been paid to the arrangements for the trials of pulverisers, with a view to ascertain not only the relative merits of the different machines, but the correct data with regard to the value of the process. That is, it will be seen not only what quantity of stuff can be pulverised per cwt. of coal, &c., but the practical value of the work done—the percentage of the total of tin in the stuff that can be extracted after pulverisation more than could be done before. The conditions are interesting, and we give them, therefore, in full:—

- (1.) The Institute will provide portable engines to work the pulverisers, and each competitor will be required to fix his machine in the position indicated by the committee, and to provide the necessary belt pulley to take power from the engine.
- (2.) One pulveriser only will be connected to each engine, and the power required to work the same will be determined by a competent engineer under the superintendence of Mr. W. Husband.
- (3.) The material operated on will be rough stamps sand ("rows"), which will be properly sampled beforehand, and each machine will be required to work about 10 hours.
- (4.) A known weight of sand will be placed to each machine, and at the conclusion of the trial the quantity remaining untreated will

be weighed back; the difference representing the stuff actually passed through the machine.

(5.) The pulverised stuff as it leaves the machines will be passed into round drop buddles of the same size and construction (one of which will be provided to each machine), and samples will be taken from each buddle and assayed by two independent persons appointed by the committee to determine the separation effected in each case.

(6.) The fineness of the stuff pulverised will also be determined and considered by the committee.

(7.) The committee will be guided in their decision mainly by the completeness of the separation and the quantity of the stuff pulverised.

(8.) The silver and bronze medals of the Institute will be awarded to the machines standing in the first and second order of merit.

(9.) The committee will carry out the above programme, or adhere thereto as near as possible, but reserve to themselves the right to vary the experiments, &c., if in their opinion it is found to be absolutely necessary in order to do justice to the exhibitors.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Sept. 20.—On the Exchanges this week large consumers of coal sought to place forward orders in heavy lots at current rates, but were rarely successful. Their orders would, in several instances, have been accepted at a rise of 6d. per ton, while from that rise to 1s. was occasionally asked, for it is assumed that notice will soon be sent out, announcing a rise in furnace coal to 10s. per ton from the ruling standard figure of 9s. Occasionally, buyers and sellers were brought together by a concession, on the part of the former, of an additional 3d. per ton for good smelting qualities. Coke was in good supply, and realised a better proportionate sale than coal. Some excellent South Wales samples were procurable at 15s. easy. It is anticipated that the result of the present arbitration proceedings will be to increase the present rate of wages, which is now, for Thick coal men, 3s. 8d. per working day of eight hours. It is satisfactory, touching the doubtfulness of the loyalty to the newly-formed South Staffordshire Wages Board, of all the twelve districts represented upon it, that at the half-yearly meeting of the Council of the Federated Union of Miners for the Midland Counties, held in Wolverhampton on Tuesday, a resolution was passed counselling strict adherence.

The Pig-iron Trade has been less prejudiced by the late strike. Deliveries are now being resumed; but owing to the cessation of work, averaging a fortnight for the whole district, former purchases have in the interval proved equal to consumers' requirements. Stocks at the furnaces are mostly heavier than usual, yet the tendency to higher prices for smelting requisites kept prices to-day from receding below the quotations of—for cinder qualities, 40s. to 42s. 6d.; medium sorts, 45s. to 50s.; and all-mines and hematites, 60s. to 65s. and 67s. 6d. The men's representatives in this district of the South Staffordshire Mill and Forge Wages Board have been consulting with their constituents this week as to the proposed revision of the sliding scale. At the meetings which have been held at Westbromwich and Brierley Hill the opinion is unanimous that the scale should be revised, and some of the operatives demand that the wages shall be on the basis of 8s., plus 1s. over pounds per ton, according to the fluctuations in the price of iron. The Westbromwich men have resolved that the basis shall include all classes of iron likewise, with a premium of 1s. in excess of equal shillings to pounds in price; but the Brierley Hill men have fixed the minimum at 8s.

TRADE IN SOUTH WALES.

Sept. 20.—Prices of large steam coal maintain their position, and the shipments are again large. Small coal is in slack request, at 4s. per ton. The amount sent away last week from Cardiff was—137,765 tons foreign, and 18,648 coastwise; Newport, 33,760 tons foreign, and 21,230 coastwise; Swansea, 26,890 tons foreign, and 4533 coastwise. The reduction of rates, which comes into force on the Taff Vale Railway on Oct. 1, will be another boon to the freighters, following so closely upon the reduction which came into force on Jan. 1 last. The effect of the last reduction was not only to recoup the loss of about 1000l. per month, but to increase the receipts of the railway company to an equal amount. Some of the largest freighters will benefit by this reduction to the extent of 3000l. and more per annum. The amount of coal sent by railway to London is increasing in quantity.

Comparing August with the previous month, there was a falling off as regards the Great Western of 21,380 tons, but this did not all arise from the South Wales coal field, for most of the leading collieries sent a full average, whilst the London and North-Western carried more than usual from some of the collieries, taking 5000 tons from the Aberdare Iron Company, and 1600 tons each from Bwlfa and Fforchaman, and a considerable tonnage from Nixon's Navigation, Dowlais, Middle Duffryn, Lower Duffryn, Resolven, and the Rhondda Mountain. The London and North-Western in all took about 17,600 tons last month from South Wales. The Great Northern had also about 2000 tons put to it from Aberdare, and the Midland 1600 tons from the same place. The Great Western did not convey quite so much in August from Aberdare as in the previous month, and from four places in the Aberdare district, including the Iron Company and Wayne's, it took about 6200 tons, being less than in some previous months. Blaina, however, looked rather better with 3600 tons, but Bwlfa scarcely came up to the average. Taking last month's traffic, Merthyr Crawshaw again takes the lead with 5000 tons, Cwmndare following with 4800 tons. Then comes Aberdare, Blaina, the Plymouth Iron Company, Nixon's Navigation, and Tredegar, the latter being credited with 2800 tons. The Cymmer Colliery did fairly well last month, having forwarded 2200 tons over the Great Western, and the same may be said with respect to Mountain Ash with 2000 tons, Nant-y-moel with 1300 tons, Fforchaman 2500, and 1000 tons for Ebbw Vale. A moderate tonnage was sent from Dinas, Glyn Neath, Hirwain, Tower Craig, Llwydcoed, and Blaengwawr.

It is stated on good authority that negotiations by Mr. Davies, of the Ocean Collieries, for the taking of the finest tract of the South Wales coal field, have been completed, and that practical evidences will soon be forthcoming.

Mr. J. V. Thomas, of Cardiff, is about to introduce into the Cardiff Docks, by arrangement with Mr. W. T. Lewis, an auxiliary system of loading coal and patent fuel into ships by means of lighters and cranes, which promises to be most useful and advantageous. By this system coal can either be tipped into boxes placed in barges at collieries, on the Glamorgan Canal, in lighters or hulks at the dock side, taken thence alongside the ship, or the boxes (which are made so that six of them, holding about 25 cwt. each, will fit into a 10-ton truck) can be filled at the colliery, and transported direct to the ship's side, where, by means of specially designed cranes, they will be lifted from the lighters and lowered into the hold of the ship. In the latter case the coal can be placed in the ship practically in the same condition as it is loaded into the boxes at the colliery, thus saving much breakage and small. Patent fuel can be loaded by a similar process with great advantage. The patent fuel being loaded on trolleys, and placed in the lighters at the works, the trolleys can be lifted at the ship's side by the cranes, and lowered right into the hold of the ship on to light movable rails, whereon the trimmers can divert them as required. By this system a vessel can be loaded with coal or patent fuel at two, three, or four hatchways at the same time, either in the middle of the dock entirely by this means, or while she is being loaded at one hatchway under the tip in the usual way, she can be bunkered. Mr. Thomas calculates that without difficulty he could load from 700 to 800 tons by each crane every 24 hours. The system will, it is believed, be found to be of very great utility in bunkering steamers, which can always be done without interfering with the operation of loading the cargo.

We must wait for the expiry of the notices posted up at the various steel works before we can tell what course will be taken by the men in the matter. With the price of steel rails at about one-third of what they were a couple of years ago it is evident that nothing further can be done in the way of decrease in price. The fierce competition which has set in from Belgium, Germany, and the Uni-

ted States, has brought profits to nil, and unless the men consent to a lowering of wages the works must be closed. The masters will ask for a reduction of 10 per cent., probably with a view of coming to a compromise at 5 per cent. Messrs. Crawshaw have laid out an immense sum of money in adapting their works to the make of steel which present prices afford no encouragement to them to set their works going. Some parcels were sent away last week from Newport as follows:—New Orleans, 2932 tons; Montreal, 1650; Galveston, 1300; Tampico, 588; New York, 405; Uddevalla, 310; Santos, 200; Barcelona, 10. From Cardiff only one parcel of 685 tons was exported. The iron ore trade remains in a low state. Cardiff received 8334 tons from Bilbao, and Newport 6690. The price may be quoted at 13s. 6d. with a weak demand.

The manufacturers of tin plates have no cause to complain at the present condition of the trade. Good cokes realise from 16s. to 16s. 6d. per ton, while charcoals fetch from 18s. to 26s. Wasters are quoted at 15s. 9d.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Sept. 20.—In the mining districts of Derbyshire and the West Riding the coal miners have again determined to demand an advance of wages, based on the ground that trade is good and that coal realises a fair price. To some extent these statements may be taken as correct; but no consideration is given to the fact that in previous years the collieries were worked solely for the benefit of the workmen. It may be that during the year so far some profit has been made by the owners of coal mines; but it is also true that in the previous three or four years so far from a profit being made, many proprietors suffered considerable loss. But this does not appear to have struck those who are about to commence an agitation for more wages. The demand for house coal has been particularly good for the year, and this has been especially the case as regards the Metropolitan. Prices have been of a winter character; but the Pinxton Company it may be said continue to sell their coal from 2s. to 2s. 6d. per ton less than the merchants and dealers. This shows that there is no reason for the coal being so high as it now is, for the pit prices bear no comparison with what is charged the consumers. Rather more steam coal is being sent from several parts of Derbyshire to the South, and gas coal is going away more freely. The quantity of coke made in the county is considerably less than is consumed, and it seems singular that large quantities of it have to be imported, seeing that the Derbyshire coal is well suited for converting into coke. The Iron Trade continues in a healthy state, there being a large output of pig, whilst the foundries continue to be well employed in pipes and general castings.

Some of the lighter branches of the Sheffield trades that have been quiet for the last two or three months are now looking better both as regards home and foreign orders. The cutlery houses have become more active, so that there is an increased consumption of steel, both Bessemer and crucible, and although there has been no improvement as regards rails our makers of them, finding that they cannot compete for foreign orders—at least with the works at Barrow, Middlesbrough, and Cumberland—are looking more to the production of other descriptions of railway material, including springs, tyres, axles, and wheels, and in these they are doing a very fair business. Brown's and Cammell's continue to be actively employed on their specialities, steel-faced armour-plates, having large contracts in hand for our own as well as other Governments, whilst there is a fair output also of ordnance material. Tool makers are kept fairly going in both light and heavy goods, suitable alike for joiners, engineers, and fitters, as well as small lathes for amateurs. In ordinary ship and boiler plates the make is kept up to the average, and this is also the case as regards tubes for locomotive, marine, and other boilers. The foundries, as a rule, have become more active in mining appliances, and in gas, steam, and water fittings, cooking ranges, grates, and most kinds of pipes. The engine-works have been better employed in locomotive and other work. The collieries in the Sheffield district have been working well of late, as the demand for steam, house, and gas coal has been good, and in consequence of this state of things so advantageous to the workmen there is to be a conference at Rotherham on Monday next to consider whether an advance of 15 or 20 per cent. is to be demanded from the colliery owners.

TRADE OF THE TYNE AND WEAR.

Sept. 20.—There is little change to note in the state of trade here during the past week. On the whole, there is full employment in all branches of the coal and other trades throughout the district. The use of North Country steam coal in the British navy continues to attract much attention, and the Admiralty are to be solicited to listen fairly to the just claims on behalf of the steam coal of this district. There is no wish on behalf of the coalmasters in this district to demand from our Government more than that share of the trade to which they are justly entitled. This coal has long been tested, and it is unrivalled for generating steam quickly. It is worthy of notice as proving the value of this coal, that foreign Governments continue to buy the coal freely. Best steam collieries have orders on their books for a few days in advance; seconds are hardly so favourably situated. Steam small coals are plentiful. Blacksmiths' forging, and all kinds of manufacturing coals, are in good demand. There is a steady demand for coke of the best quality.

The shipyards, engineers, foundries, &c., continue generally to be well employed. There is also an excellent demand for fire-bricks, and all fire-clay goods, and for cement. The Chemical Trades continue brisk, with a good prospect for the future. The Iron Trade has been very quiet this week, the Scotch market having been weak; there is, however, little change in rates, makers are very firm, and No. 3 iron is very scarce. Shipments have also been large. There has been a good delivery of iron for the Baltic and for German and Belgian ports. An active state of business generally prevails. Ship-plates for early delivery are 6l. 5s.; angles, 5l. 12s. 6d.; bars, 5l. 17s. 6d.; No. 3 pig-iron, 39s. The Household Coal Trade is improving, chiefly for shipment. Coke does not exhibit much change. Other classes of coal in good enquiry.

MINING PROSPECTS IN WEARDALE.—The directors of the Wear-dale Lead Mines, are negotiating for the plant of the Stotsfield Burn Mine, with a view to opening this mine and also the adjoining one of Brandon Walls. At Grove Rake, now worked, several improvements are to be made. At Boltburn Mine preparations are in progress to work the ore. The lead smelting mills are expected to be vacated in a few weeks by Mr. Beaumont, and when Green Lows washing-floors, &c., are handed over to the new company they will have possession of the whole, or nearly so, of the plant and stores on the royalty. The other mines in Wardale have been inspected, and preparations are being made for opening some of the old mines, after which some new trials are in view. It is expected that in a short time the whole of the Dales people will be employed.

THE IRON AND STEEL INSTITUTE MEETING AT MIDDLESBOROUGH.—It is quite impossible that a more suitable place could have been selected for this important meeting than the great iron centre of the North, where a larger quantity of pig-iron is manufactured than in any other locality, where steel is also manufactured on the largest scale by the most modern processes. Middlesbrough is also the centre of a great mining district; on the south-east of the iron town are extensive iron ore mines, from whence the immense supplies of iron ore are derived, and to the north and west the great South Durham coal field, where an abundant supply of coal is raised and coke is manufactured on the largest scale in this country and of the best quality for use at the iron furnaces and for export. As showing the rapid advance of the iron trade at Middlesbrough, in 1858 the production of pig-iron in the Cleveland district was 512,700 tons. Last year the total make of all kinds of pig-iron was 2,688,650 tons, and manufactured iron and steel 631,041 tons. The total quantity of all kinds of iron shipped coastwise and to foreign countries last year from Middlesbrough was 1,247,566 tons, of which 931,273 tons consisted of pig-iron and 316,293 tons manufactured iron and steel. There are 164 furnaces in the district, 117 of which are at present blowing. No iron-making district in the world is more favourably situated for the production of pig-iron than Cleve-

land. At one time 300,000 tons of iron rails per annum were produced, but these have been surpassed by the steel rails made by the basic process at Messrs. Bolckow and Vaughan's works at Essen, the steel rails being quite as cheap and have a longer life than iron rails.

REPORT FROM NORTH WALES, SALOP, AND CARDIGAN.

Sept. 20.—In the absence of mining news from the Principality let me describe a visit recently paid to the extensive works in progress in connection with the great reservoir now in course of construction for the Liverpool Corporation in the valley of the Vyrnwy, North Wales.

We arrived at the Welsh town of Llanfyllin about midday, and after a luncheon at the Wynnstay Hotel, we started for the works some 10 miles distant. Our route for nearly six miles lay along the road to Carmoffice and Mallwyd, then we turned off along a narrow road leading to the village of Llanwddyn. At this point we passed the fine teams belonging to the Corporation. From 60 to 70 horses were told were employed daily in the cartage of cement for the great embankment and nearly as many more in the carriage of other necessary materials.

When we reached the summit of the pass of Boncyncein some 1200 ft. above sea level, we caught our first distant sight of works some two miles distant. The new graveyard, and the site for the new church lay before us on the opposite hill. The interments in the ancient churchyard of Llanwddyn have ceased, and already there are several newly-made graves in the new burying ground. These, however, so far are the graves of strangers. The natives of the valley have not as yet taken to the new graveyard—indeed, it is, what is to them, the desecration of the old churchyard, which is to them the bitterest portion of the movement, to turn their native valley into a lake. By this time we have reached two or three wooden shanties or shops, built by private speculators, and close by, at Nant-lacher, we come to the commencement of the new lode, which gradually rises from this point until it reaches a little above the level of the proposed lake, which it will skirt on its northern side for five miles, following the contour of the ground up the valleys and cwm, down which rapid little streams rush into the main valley of the Vyrnwy. At the western or upper end of the lake mountain roads branch off to Bala, on the one side, and to Dinas Mawdddy on the other; and the new road will extend down the southern side of the lake to the great embankment. Long reaches of these new roads are already constructed, and a beautiful road they make.

We pass a little further, and we see a new school built of wood, which has been erected by the Corporation for the children of the workmen and of the local inhabitants. On the lower side of the road is a wooden mission chapel and parsonage belonging to the Independents. In a minute or two from these we are at the works, into which we turn, having on our left a large well-designed and built shed for the storage and treatment of cement. On our right hand is a commodious room for workmen called the cocoa-room, and which we are informed is largely made use of for concerts, lectures, and Eisteddfodau, for a large proportion of the workmen are Welshmen, and they preserve their love of music and song.

We now look down into the great excavation which has been made right across the valley, through from 50 to 90 ft. of gravel, sand, and clay, in order to reach the rock on which the great stone embankment is to rest. Already the work of building goes on to the extent of some 200 cubic yards a day. There are wagons laden with stone on every side, from the size of a pebble to stones weighing 7 tons. We are informed that about 750,000 tons of stone will be used in the construction of the wall, which is 120 ft. wide at its base, about 450 yards long at the top, and 180 ft. high at its deepest part below the ground. The stones are all set in Portland cement.

While we look at the building a train of stone drawn by a locomotive comes in from a quarry some 1½ mile distant up a side valley. Readily accepting a kind invitation, we jump on the engine, the Mersey—and start for the quarry. On our right are 24 wooden houses for the workmen, and further on, on our left, is the quarry village containing a similar number of huts. Each hut has a large kitchen, with a good grate and cooking apparatus, two private sleeping rooms, and one big room containing sleeping accommodation for twelve men, arranged on each side of the room like berths on board ship. The sanitary arrangements, we believe, have been carefully provided for.

The line on which we travel is a double line, 3 ft. gauge, and rises all the way to the quarry at a gradient of 1 in 30. It has more sidings for various purposes than we could count. A little way up we pass the outlet entrance to the tunnel, 2½ miles long, which is being driven through the mountains to the Hirnant Valley, whence the conduit of iron pipes, 3 ft. 6 in. in diameter, will convey the water 70 miles to Liverpool. At a little distance further on we reach the carpenters', the smiths', and the fitters' shops belonging to the quarry, and down below, on our left, are two of Marsden's stone-breakers, one for making macadam for concrete and the other for pulverising the stone into sand for mixing with the cement. Rounding some sharp curves, from which we look precipitously down to the brook below, we reach the quarry. It is a fine face of rock some 300 yards long, of bluish grey stone, tough and hard, which slopes down the right way for quarrying at an angle of from 40° to 45°. The site of the quarry was selected by Mr. D. C. Davies, F.G.S., of Oswestry, who also superintends the quarrying operations. The blasting is done by electricity, a row of from 20 to 30 holes 9 ft. deep—the thickness of one bed—a yard apart and 24 yards from the face of the rock being fired simultaneously. Every stone is washed, for which purpose water is brought down plentifully from a height of 70 ft.; a bedding face is dressed on each stone that has not one naturally, and the stones are doweled and otherwise prepared for laying before they leave the quarry. Every wagon-load is weighed, and the number of stones, if of any size, is counted. At night the work proceeds by means of the electric light. We return to the embankment, and visit the more extensive workshops of the general works, and by the courtesy of Mr. Martin, the general superintendent, we examine the well-appointed stable. As far as our impression goes, the method, organization, and skill with which the various works seem to be carried out reflects the highest credit upon the engineers and their assistants.

Leaving the works about 6 P.M., a charming ride, with the full harvest moon rising above the summits of the mountains, brings us back to Llanfyllin, in time for the 7.45 train to almost anywhere. We may add that about 1500 men are employed in the valley, and that they are as orderly and well conducted a set of men as can be found anywhere.

CYLINDRICAL JAW STONE-BREAKER.—The invention of Mr. SAMUEL MASON, of Leicester, consists essentially of a framework which supports a cylindrical jaw, within which, upon an approximately vertical shaft, is a crushing head, preferably tapered towards its upper end, and circular or other suitable form in section. The shaft is supported in a bearing at its upper end, consisting of a tapered hole in a cross frame or support, and having a cap on top to keep out the dirt, &c. Sometimes he forms the hole in the bearing block with a double taper, the narrowest portion being at or near the centre. Near the bottom of the machine is a bevel or mitre wheel with a downwardly extending boss, terminating in an ordinary footstep adjustable by set screws if desired. In the body of the wheel, on its upper side, is a recess in which is a second footstep, which carries the lower end of the crusher shaft; this footstep is adjustable within the recess and revolves with the wheel, so that, when set out of the centre, it gives an eccentric motion to the lower end of the crusher shaft. Both the cylindrical and conical crusher jaws are fluted, and stones, &c., are crushed by the eccentric motion imparted to the crusher shaft. Suitable shoots carry off the stones, &c., when crushed. The machine may be driven by a bevel pinion upon a horizontal shaft gearing with the bevel wheel; the horizontal shaft carries a fly wheel, and is driven by belting in the ordinary manner. The cylindrical jaw may be formed in segments in one piece. Where required set screws can be provided for raising or lowering the cone. In some cases he finds it well to employ a square shaft or equivalent,

which fits into the cone and causes it to revolve with the bevel wheel. For driving by horse or similar power a shaft or arm may be attached to or connected with the wheel or to the top of the shaft in any convenient manner. The lower portion of the cylindrical jaw may be spread out and notched, and the cone formed to fit, and a spring applied, if needed, for pulverising and the like.

THE IRON AND STEEL INSTITUTE.

A gloom was thrown over the proceedings of the Middlesbrough meeting, which in other respects must be considered the most successful autumn meeting yet held, by the lamentable accident which occurred to Mr. Samuel Davidson at the North-Eastern Steel Company's Works. From the confusion prevailing at the moment it was scarcely possible to ascertain the exact cause or nature of the accident, but the inquest has now been held, and accurate details obtained. A brother-in-law of deceased (Mr. J. Willis, Government Inspector of Mines), was present at the enquiry. Evidence was given showing that a locomotive bumped against a bogey on which the ladle of metal was standing in order to move it to a converter, but it was on a sharp curve, and the engine pushed against it three times, the metal overturning after the third concussion. Numerous witnesses were examined, and the manager of the works (Mr. A. Cooper) said that in his opinion the striking of the bogey by the locomotive caused a "he and she" key, which kept the ladle in an upright position, to fall out, the weight of the metal then overturning the ladle. The jury returned a verdict of "Accidental Death," but called the attention of the engineers at the steelworks to the design of the bogey and ladle, especially to the coupling from the worm gear of the ladle.

Before commencing the business of Thursday's meeting the President, Mr. Bernard Samuelson, announced that the sufferers were all in a fair way of recovery, with the exception of Mr. Samuel Davidson, who had unfortunately succumbed to his injuries. Enquiries had been made, and it was found that the deceased gentleman, comparatively a young man, who had had to fight his way, had been unable to provide adequately for his family, who were dependent for their means of subsistence on his salary as manager of the Horbury Works. It had, therefore, been thought well to set on foot a subscription, to which already many promises of support had been received, and Mr. Whitwell, who had consented to act as treasurer to the fund, would be very glad to receive subscriptions. As to the workmen who had suffered, the North-Eastern Steel Works would take care that they did not suffer unnecessarily. They had the hearty sympathy of the Institute, the members of which, had there not been other sources of relief, would have been very glad to have afforded what help it was in their power to give. The subscription was commenced forthwith, and 760l. realised in the room, the amount being afterwards increased to 1000l. It may be hoped that the subscriptions may not be limited to members of the Institute, but that all who derive advantage from the researches of the members will contribute.

MINING ON LAKE SUPERIOR—BELT COPPER MINES.

The satisfactory manner in which the development of the Belt Copper Mines is progressing affords satisfactory grounds for hoping that another will be added to the list of prosperous American mines returning profits to British capitalists. The company was formed with a capital of 250,000l., in shares of 5l. each, and although the purchase was affected at the usual extravagant rate a margin of 75,000l. was allowed for working capital, whilst only 40,000l. was estimated to be necessary to open and equip the mines with the necessary mining plant to carry on the work on an extensive scale. The plant to consist of ball stamps, air compressor, rock drills, rock breakers, railroad, and rolling stock. The properties which the company own consist of the Old Bohemian Mine, containing 1500 acres, the Great Western Mine, 320 acres, and the Penn mining property, 1440 acres, in all about 3260 acres. The Bohemian and Great Western properties give them a continuous length of nearly 1½ mile of all the veins known to exist in the Evergreen Grange, while the Penn has a continuous length of over two miles on both ranges, or those containing the Minnesota run of veins and the Evergreen Range vein. In all of these properties they have not only great length, but great depth of vein. At present, the company is confining its work to the Bohemian and Great Western Mines, both of which have been heretofore worked, and on the Bohemian quite a mine has been opened. In acquiring the property they became the owners of considerable surface improvements. On the Bohemian were a stamp mill with engine and boilers and 12 head of stamps, hoisting engine and boiler at No. 1 shaft. A portable engine and boiler on the Evergreen lode. A saw mill, with engine, boiler, &c., about 20 good tenement houses, store office, barns, several log houses, and other buildings, so that they have been able to unwater the mine and carry on mining, house all their men, families, teams, and so on, with only the cost of needed repairs. On the Great Western property there were several good houses, offices, warehouse, and barns, which only needed repairs for occupancy.

Not a great deal of mining work had, says the Ontonagon Miner, been done on this property, one shaft had been sunk to the second level on the north or Knowlton lode, which will be used in connection with others now sinking on a line with it on the Bohemian part of the property west of it. On the Bohemian part of the property, however, considerable mining work had been done in past years. Near where the new No. 1 shaft is on the Knowlton vein, some work has been done on what was then known as the Piscataqua Mine. On the Butler or Champion vein quite a mine had been opened, consisting of two shafts, No. 1 210 ft. deep and No. 2 260 ft. deep, or 470 ft. of shafting. There were three levels driven, the first, or adit level, 450 ft., the second 480 ft., and the third 430 ft., making a total length of levels driven 1360 ft. On the south lode, or Evergreen vein, a mine has been started, two shafts have been sunk to the first level and connected.

It is thus not unreasonably claimed that, in acquiring the property, the company became possessors of considerable mine openings, mining machinery, tools and equipments, houses, cleared land, roads, all of which had cost the former owners a very large amount of money, most of the work having been done in the early days of mining, when Lake Superior copper mining was in its infancy, compared with the rapid strides made in the modes of mining during the past five or six years. Before it was purchased the mine was unwatered and thoroughly examined by Mr. Arch. Brand, the present superintendent for the London parties, and afterward by one of their directors and mining engineer, both from London. During the progress of work it has been visited by other directors and consulting engineers, all of whom have expressed the utmost confidence in the value and future of the mine. The mine is being opened under the superintendence of Mr. Archibald Brand, who has had several years experience in copper ore mines in Newfoundland, and is pushing the construction work with commendable energy.

The progress made with the development of the property since it has been in English hands appears to have been thoroughly satisfactory. No. 1 shaft has been sunk, and several levels driven from it. No stopping, however, has been done by the company, and comparatively little had been done by the former owners or tributaries, so that practically the whole of this ground is untouched. A thorough examination of this ground shows a fair amount of mass and barrel copper protruding along the sides of the drifts and shafts, besides a fair grade of stamp rock, from which alone we can judge that when the ground is beaten away it will produce profitable paying vein rock. To the north of the work being done on this vein another mine is being opened on the Knowlton vein, No. 1 shaft has been sunk 125 ft., and various levels driven. Altogether the company is opening a large amount of ground, and by the time their stamp-mill is ready they will have an immense reserve ground to stoop from for a supply. They are at present using eight Power drills, but have ordered eight more, so that by the time the mill is ready they will be prepared to produce, and handle all the rock needed. The stamp-mill is now being enclosed, and the erection of the machinery will be pushed with vigour.

A railroad is being built from the mine to the mill 1½ mile long,

with a grade of 60 ft. to the mile; one bridge on it is 220 ft. long all of the timber for which is on the ground, framed, ready for erection. The road will be laid with 35 lb. steel rails; width of road, 4 ft. 1 in. A train of mineral wagons and a 20-ton locomotive are by this time on the property, so that the road and its equipment will be ready as soon as the stamp-mill. It appears that two heads of Balls' stamps have been delivered, but one of them will be erected this fall, and the other one will be set up through the winter. They have an abundance of water from the Fire Steel River, which runs through the property. The work of construction now going on is the stamp-mill, two rock-houses, two engine-houses, an office and a dwelling-house for the agent. The whole energy, money, and force of the company is being used to open and equip the mine so as to know what they have before expending much improvement on the surface. The Ontonagon Mine authorities state unhesitatingly that, from their examination and their previous knowledge of the property, that the English capitalists are pursuing the only course to develop the property and put it on a paying basis, and that they firmly believe that they will be amply rewarded for their investment.

Original Correspondence.

TIN IN SOUTH AUSTRALIA.

SIR,—Your article on this subject in last week's *Mining Journal* but insufficiently indicates the magnitude of the mineral wealth of this portion of Australia, commonly called the Northern Territory of South Australia, and shows a new field of operation for legitimate mining enterprise. When it is considered what immense sums of money have been subscribed in London for the development of mines in various foreign states, in many cases on very slight evidence and too often on representations of a fraudulent nature, it is very much to be regretted that some small portion of that capital has not been employed in assisting the advancement of mining enterprise in some of the British colonies.

Only recently the Governments of the colonies of Australia have seen the desirability of the formation of schools of mines and in promoting proper geological surveys. A report of Prof. Tate—now of the Adelaide University—shows the great extent of country in the Northern Territory full of mineral deposits of great promise, but which is almost untouched, owing to the want of capital and systematic development. Your correspondent has but roughly described this tin mine. Recent official reports show that "the tin claims being worked at Bridge Creek are looking splendid. The proprietors are down about 20 ft., and turning out large blocks of tin, many weighing 50 and 60 lbs. each, and reckoned to go 70 per cent. Every shot turns up something better than the last."

Not the least interesting feature in the discovery is that the lodes—which have been traced, I gather, from the same authentic source, for a distance of over two miles continuously—are of an exceedingly soft and friable nature, and show—what is very unusual in tin mining—that these tin mines may be worked with machinery of a simple description. I have had the advantage of seeing a geological map of this country, and I find it contains immense deposits of gold-bearing quartz, in the midst of which this new discovery of tin occurs. No doubt with the construction of the Trans-Continental Railway—which work is apparently being done in peaceable by the Government of South Australia from the north and south ends—the development of its mineral wealth is only a question of time; but few people in this portion of the world are acquainted with the value of the mineral wealth of Australia; and, probably, as the mining public have had their faith in these matters so rudely shaken by the result of operations in Wyanad, in Southern India, they are less likely to allow their little remaining faith to carry them further afield. I am afraid to trespass on your space further, and I shall be heartily obliged if you will give it publicity in your columns, for I think that many of your readers occasionally cast an eye on Australian mining affairs, and that this may interest them.

W. G. NASH.

Royal Colonial Institute, Sept. 21.

THE NEW GOLD FIELD OF THE UPPER PENINSULA OF MICHIGAN, U.S.A.

SIR,—As you may think a few lines giving an account of this new discovery of gold interesting to the readers of the *Mining Journal*, I have thought it well to send you the following. The existence of gold and silver bearing veins near Marquette, in the Upper Peninsula of Michigan has long been known. But doubt has always been felt as to whether they would ever be found sufficiently large to pay for working. The State Commissioner of Mineral Statistics in describing this development writes:—"The fact that gold and silver does really exist in paying quantities in the upper peninsula is, we are much inclined to believe, about to be established beyond all question by the Ropes Gold and Silver Mining Company, which was incorporated in August, 1881, and has since been exploring the south half of the north-west quarter of section 29, town 48, range 27, where, in the year named, Mr. Julius Ropes, of Ishpeming, had previously discovered a network of small quartz veins well charged with the precious metals."

The formation in which these veins occur is a portion of the range embraced in Dr. Rominger's geological report for 1881, and which he designates the serpentine group—a distinct range of rocks extending in an east and west course over a length of eight or ten miles. Dr. Rominger regards these serpentines as being of truly igneous origin. Since the first discovery, however, Mr. Ropes patiently and persistently pursued his researches until at last he was rewarded by the discovery of what is believed to be the mother vein, from which the smaller ones are probably only ramifications. This has now been exposed in a number of pits and shafts, for a seemingly continuous length of about 800 feet, the vein being from 3 to 5 feet in width, with regular and well defined walls, the footwall being a talcose schist heavily charged with mineral. It is well known that the talcose schist is the gold repository in all the richest gold fields in the world, while here the free gold and silver in the quartz is often plainly visible to the naked eye.

A large number of analyses of this rock have been made, many by parties wholly disinterested, the results varying all the way from \$10 to \$300 in gold and silver, the latter predominating. In view of the analyses which have been made here and in Chicago, Milwaukee, New York, and elsewhere, all telling the same story, and seeing as we have pieces of the vein matter, taken at random from a dump which had been picked over by hundreds in search of the richest specimens, with the native gold and silver plainly to be seen in them, we are forced to the belief that the mill-test soon to be made will prove conclusively that the production of the precious metals is about to be added to the mining industry of the upper peninsula.

The latest news reports that a 10-ton mill has just been erected, and that stamping will be commenced immediately. The success of the undertaking has roused the explorers, and the land companies of this region are continually receiving applications for options to drill discovered gold properties.

ARTHUR TAPP.

Great George-street, Sept. 20.

BURNISLAND OIL COMPANY.—About 200 shareholders acting on the suggestion of Bailie Richmond, made at the last annual meeting, visited the works at Burnisland on Sept. 15. The party were taken first to one of the highest points on the hillside, where the works are situated, and here Mr. W. N. Grainger, the general manager and secretary of the company, described the boundaries of the estate, which belongs to the company; and thereafter a visit was paid to one of the mines and the nature of the shale seam, as well as the process of excavation, were described by the underground manager. The works are arranged with a view to the saving of as much labour as possible. The raw shale being on the highest level is easily transferred to a lower stage, where it is broken up into small pieces by powerful machinery and immediately transferred to the retorts (which are Henderson's patent) for destructive distillation. This was clearly seen by the company, and the after treatment of the resulting oils and other products of distillation were fully described and explained. The company saw the crude oil distilling from the retorts, the separation of the oil and the ammoniacal liquor, the various stages of purification of the oil, the manufacture of paraffin wax, and the treatment of the ammoniacal liquor to obtain sulphate of ammonia. Considerable time was coupled in the inspection and explanation

tion of the various processes, and all present seemed thoroughly satisfied with the economical way in which the works throughout were conducted.

Meetings of Public Companies.

DOLCOATH MINING COMPANY.

A six-monthly meeting of shareholders was held at the mine on Monday.—Mr. W. RABLING BUTLIN in the chair.

The usual preliminaries having been disposed of, the accounts were submitted showing a profit on the six months' working of 8240l. The supplementary statement showed:—To Mr. Basset for renewal of lease, 25,000l.; dividend account overdrawn—Mayne frauds, 173l.; Mr. Trythall, London accountant, 103l. = 25,276l. By profit brought down, 8240l.; balance from last account, 959l.; sale of 201 shares, 13,432l. = 22,635l.; leaving a credit balance of 2641l.

The CHAIRMAN explained that a committee meeting had just been held at which a resolution was adopted, recommending that the dividend balance be carried forward towards the payment of the new lease. A cheque had been drawn that morning for 13,500l., the first 12,500l. having been paid on Aug. 16. The committee recommended that Mr. John Champion, and Mr. F. W. Thomas be appointed clerks of the mine; that Mr. Henry Mitchell, of West Police, be appointed auditor; that Mr. W. Reynolds having expressed his wish to be relieved of some of his duties, be paid 3s. per month; and that Capt. Provis, who retired as an agent of the mine some years since, be paid 2½ guineas instead of 5 guineas as hitherto, both these amounts to be during pleasure.

Mr. HEARD enquired whether they had to deal with the tutwork and tribute account, and remarked that they had been seeing that fictitious sum from meeting to meeting.

The CHAIRMAN presumed Mr. HEARD meant the item of 5380l. The committee had considered the question, and intended to remove the amount gradually.

Mr. CLINTON objected to the whole of the balance being put towards paying off the fine of Mr. Basset, when it had been decided to put aside one-half the profits for this purpose. It seemed to him that the adventurers were being treated with the greatest disrespect by the committee.

Capt. THOMAS said that when this decision was arrived at the Mayne frauds had not been discovered, and if no resolution had been passed since that discovery to lay by the whole of the profits he certainly understood the feeling of the shareholders to be to that effect.

Mr. W. H. RULE: What do we want with a committee at all, Capt. Josiah? Capt. THOMAS: It is not for me to say.

Capt. Josiah Thomas, John, Chenoweth, Williams, and Pridemore's report upon the various points of operation was then read.

Capt. THOMAS, supplementing the report, said they had scarcely done so well in the six months as he had hoped to have done. He did not think that they would have been in a position to pay Mr. Basset the 25,000l., but he certainly was of opinion that the sum that remained would have been trifling. Their calculations had been somewhat interfered with by the heavy run of ground, and the fall in prices. Their future prospects were, however, very encouraging. Consequently on the recent drop of 1l. in the price of tin their receipts had fallen off to the extent of 700l.

Mr. HEARD asked if the new lease had been received?—Capt. JOSIAH THOMAS said it had not, but it had been signed by Captain Rabling and himself.

Mr. HEARD did not see Mr. Rogers' bill. Capt. THOMAS: He has not sent it. I applied for it more than a month ago. We should like to see the bill.

Mr. RULE: You will be sorry when you do. (Laughter.)

Mr. LANTON moved a resolution that Mr. Rogers be called upon to send in the bill forthwith.

Capt. THOMAS said Mr. Rogers had only received 250l. on account.

Mr. RULE, having been informed by Capt. Thomas that they could not dismiss the committee without a month's notice, rose and said that eight years ago he attended a meeting at Dolcoath with proxies that would have carried the majority. After that time a resolution was passed which was to the effect that before the committee the committee a month's notice should be given. When I tell you that this committee, that this beautiful committee you have here, supply the mine with 4000l. worth of materials every three months, you see it is an advantage to them.

Capt. THOMAS: That is not right.—Mr. RULE: Messrs. Williams 3821l.—Capt. THOMAS said it was for three months.

Mr. RULE: Captain Rabling, 457l.; bankers' charges, 247l. Now, I have been one of those men who have been punished for 10 years in this mine, and I say this without contradiction, that there is one—only one—that I know—on that point who is making an agent do just what he likes. Captain Thomas has been deceived by John Mayne, in whom he put the greatest confidence. Capt. Thomas is being deceived—and in time he will find it out—by other men. He challenged Capt. Rabling to deny that he had many times said "I fancy Mr. Rule that Capt. Pearce, who is tin-dresser in this mine, has too much to say respecting the working of the mine." (Loud laughter.) I am coming to a point, and a very important point, and it is this—Back years ago, when the debt accumulated on the mine it was owing to the stocking of tin. The committee of this mine stocked tin from 128l. per ton (8000s) until it dropped to 91l., and then they cleared out. They sold at the lowest prices. Capt. Pearce, he continued, has used more power in this mine than Capt. Thomas, who is manager of this and other mines. Many a time when tin was likely to go up I used to have the greatest pleasure to come here, and my tin has gone up 5l. per ton. Capt. Pearce adopted the practice then of sending many a parcel of tin suddenly, and then tin would go up. He would ask if any mine of the size of Dolcoath would encourage its tin dresser to carry on a tin stream to his own advantage just below the mine itself? No such man should look after a department such as this. (Applause.) Who had been the means of turning away honest and honourable men from that mine? Because Capt. Thomas, a cousin of Captain Josiah Thomas, came to that mine with a pure motive he was dismissed. Then a man of the name of Bryant was turned off. He remembered meeting Mr. George Williams once, and Mr. Williams said to him that he was going up to Dolcoath to dismiss a man, and he did it. Dolcoath had been managed to a great extent by the Williamses. (Applause.) He remembered that tin had been sold in Dolcoath at 11s. 6d. less than other merchants would give. He had a second letter from the Home Secretary. The committee had escaped; and escaped what they deserved—a good scolding. (Loud laughter.) He would forgive them. (Laughter.) He did not feel any animosity towards the committee. (Laughter.) He hoped they would not in the future require criticism.

Capt. THOMAS said that as a matter of fact the tin when it was stocked was so stocked at the wish of the adventurers, and it was sold through their solicitation, that, had they waited, they would have made more money. With regard to the streams, if Mr. Rule thought he was connected with any he should say so.—Mr. RULE: No, no, Capt. Josiah.

Capt. THOMAS said that never in his life had he been connected with tin streams. The stream with which Capt. Pearce was connected with was 3 miles below Dolcoath.

Mr. RULE: Further up than that. Capt. William Thomas will tell you.—Capt. W. THOMAS: No, no.

Capt. THOMAS observed that Capt. Pearce had told him so. Did Mr. Rule think that if a ton of tin escaped from Dolcoath that Capt. Pearce would have a chance of ½ cwt. 3 miles down?—Mr. RULE: Don't you know he has an interest right below?—Capt. THOMAS: I certainly do not.

Mr. GILBERT PEARSE: He has not, neither have I.

Capt. THOMAS, in the further discussion, said: We do not buy all our materials of the committee of Mr. Henry Williams; 3000l. worth of timber has been bought, but more than 3000l. worth from outside men.

Mr. TREVELLON said that if shareholders supplied materials as cheaply they should have the preference.—Mr. RULE agreed.

Capt. THOMAS added that since the last meeting he had imported direct some 700 tons of coal.

Mr. RULE said that some years since he had received a letter from the Rev. Mr. G. Pearce, who said that but for the Messrs. Williams they would save 2000l. yearly.

Mr. HUBBARD observed that it should be definitely known if Mr. Rule's charges were correct.

Mr. MARTIN (Penance) asked if all the tin that it was possible to save was saved?—Capt. THOMAS answered in the affirmative. Some years since they endeavoured to get some land below their present sett, and the lord refused to grant it.

Mr. G. PEARSE would not admit that Mr. Rule had preferred the charges he had against his father without an evil intention. It was only part of a pre-conceived resolve to vilify one, who for the last two or three years had not been on good terms with him. He made that statement most deliberately, because he had had ample evidence from certain public-house authorities which had certainly not been complimentary. He thought his father's connection with that mine, his services to the mine, were such as would have commended themselves to them without any words from him. There was not one man in the mine who had been connected with it so long as his father. For upwards of 50 years he had been there, and for more than 40 years he had been an agent. Because he had himself associated with one of the Messrs. Williams he had been laid open to charges. But these charges had emanated from a man who was as well known to them as to himself. Had he been almost any other man, he would have been answered in a more forcible manner. He characterised the assertions as a base calumny.

An uproarious discussion followed, in the course of which Mr. LANTON protested against the insinuation that tin was not weighed fairly at the smelting-houses. His experience was wholly contrary to this.

Mr. RULE said that was not intended to be conveyed by him.

Mr. LANTON, however, said that such was the implication. There was nothing to justify it.

Mr. PEARSE said he had never received any ores from any concern with which his father was concerned except Dolcoath.

The proceedings terminated abruptly by the Chairman declaring that the business was concluded.

LEADHILLS MINING AND SMELTING COMPANY.

The report of the directors prepared for presentation at the meeting on Friday next submits statement of accounts for the financial year ending with June last, showing that the work during that period has resulted in a profit of 7660l. 2s. 11d. With the very adverse condition of the lead market this is considered just cause for congratulation. The sum of 3342l. 0s. 9d. was brought forward from the previous year, of which 3000l. was distributed in August, 1882. In June, 4000l. was absorbed by the payment of an interim dividend of 4s. a share, hence there is now a balance of 4022l. 2s. 8d. to be appropriated. The directors propose to apply this:—By writing 433l. 15s. 8d. off the item "debt," appearing on the credit side of the balance-sheet; distributing a further sum of 3597l. (3s. 6d.) as dividend as soon as the funds are available; and carrying forward the balance,

681l. 8s. The "debt," which it is now proposed to reduce to 500l., we may remind you were purchased for 1000l. when the company acquired the property. With the then price of lead they were doubtless of considerable value, and a small quantity was treated, and a profit of 681l. 8s. 4d. made, which was written off their cost; but with the subsequent fall in prices the margin of profit at which they can be worked has diminished, till it has become desirable to re-adjust their value in the accounts. When lead again advances they will assume a value, but till then we should advocate a gradual further reduction of the amount at which they stand.

The returns from the mines have been extremely satisfactory, they having been larger than in any year since the company took possession. The quantity of ore dressed was 2891 tons. The smelt mills have also done increased duty, 2115 tons 13 cwt. of ore having been smelted, producing with the fumes, 33,850 bars, weighing about 1693 tons. The further improvements at the mines resulted in a greater saving of some lead than ever, the make from the smelt this year having been 4474 bars, or say 223 tons 14 cwt., against 36 tons 4 cwt., in 1878. The difference shows approximately the loss entailed by the old mode of smelting, and the devising and carrying out of the alterations reflects great credit on the local staff, which the directors have great pleasure in again recording.

The mines are fully reported upon by Capt. A. Waters, who states that the arrangements carried out at Wilson's shaft for separating the waste from the ore stuff on the spot will effect a saving of quite 50 per cent. in the carriage from that point to Reid's as well as in the quantity to be crushed, and through the machine jiggers, round buddles, and other appliances for sorting, &c. The removal of the waste from Reid's dressing-floors hitherto has been no inconsiderable item in the cost of making the ore marketable, but a great expense in this direction will now be saved. At the smelting-works, too, great improvements have been made; but he believes, if gone into minutely, the logic of facts would prove that for every 20s. spent a return of 50s. has been made. The mines were never in such a good condition in every respect as now, and nothing is wanting to make them very prosperous but a good rise in the price of lead. Dressing machinery for the slimes, as in use at Roman Gravel Mines, has been put up, and is being extended, its practical utility having been amply proved. Probable evidences of deeper runs of ore have been seen in Gripp's adit on Brown's vein, to prove which steps will be taken as soon as practicable.

GAS SHARES.—The principal business in these shares, according to this evening's report of Messrs. W. L. WEBB and Co., of the Stock Exchange and Finch-lane, has been:—Bahia (Limited), 22; Bombay (Limited), 5½ to 6; British, 4½ to 4½; Buenos Ayres, New (Limited), 9½ to 9½; Continental Union (Limited), Original, 27½ to 28½; ditto, New, 59 and 72 to 19½ to 19½; ditto, Preference, 28½; Commercial Consolidated, 241 to 244; European (Limited), 13½; Gas Light and Coke, A. Ordinary, 19½ to 19½; ditto, B, 4 per cent. Max., 83; ditto, D, 10 per cent. Preference, 22; ditto, H, 7 per cent. Max., 142½; I, 10 per cent., Preference, 214 to 216; 6 per cent. Debenture Stock, 148 to 148½; Imperial Continental, 227½ to 228½; Mauritius (Limited), 1½; Oriental, New, 6½; ditto, 1879, 1½; Monte Video, 15; Rio de Janeiro (Limited), 24½ to 26; Para, 5½ to 5½; South Metropolitan, B, 219 to 222. Gas stocks firm, especially South Metropolitan, which show an improvement, and are now a little below the highest.

INSURANCE SHARES have, according to this evening's report of Messrs. W. L. WEBB and Co., of the Stock Exchange and Finch-lane, been dealt in as follows:—Commercial Union, 16½; Employers Liability Assurance Corporation (Limited), 2½; Guardian Fire and Life, 62½; Indemnity Marine, 15½; Liverpool, London, and Globe Fire and Life, 21½; London and Provincial Marine, 4½; Marine (Limited), 26 to 26½; North British and Mercantile, 25½; Ocean Marine, 5½. Insurances easier, and little doing.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. W. ABBOTT, of Tokenhouse-yard, are given in tabular form in the last page of the Journal.

RAILWAY AND GENERAL MARKETS.—Referring to the course of business done to-day during official hours (11 to 3) Mr. Ferdinand R. Kirk, Birch-lane, writes:—"Opening: Some further sales of Mexican Railway Stock has forced down the price to 85, but the tendency seems rather better yesterday. Trunks are in demand, but not much altered as yet, the Ordinary being 17½ to 17½; Second Preference, 88 to 88½; and Thirds, 41½ to 41½. American railway shares are adversely affected by New York prices. Erie are only 32½ to 32½; Reading, 26½ to 26½; and Lake Shore, 107 to 107½. Brush Light are quoted 2½ to 2½. In mining shares there has been a better demand for Home Mines Trust, Wheal Crebor, Bratsberg, and one or two others. Bratsberg, 2½ to 2½; East Wheel Rose, 10s. to 10s. 6d.; Organo, ½ to ½; Prince of Wales, 7s. to 7s.; Goginan, ¼ to ¼. Carn Camborne, ¾; Chonales, 8s. to 7s.—Closing: Mexican Railway stock rallied to 85½, now not much over 84. Trunks are substantially better, the Second having advanced 1½ to 1½; the Ordinary are 17½ to 17½; and the Thirds, 42½ to 42½. Frontino, 1½ to 1½; Callao B, 8s. 9d. to 11s. 3d.; Chile Gold, 11s. 3d. to 13s. 9d.; Colorado, 2 to 2½; Copiapo, 3½ to 3½; Emma, 1½ to 1½."

ROTARY PUMPS AND ENGINES.

Although the principle of all the best forms of rotary pumps and engines is very similar, there are few classes of machinery in which minute differences of detail produce such widely different results. An apparatus which is especially applicable for drawing or forcing air has recently been patented by Mr. E. B. DONKIN, of Southwark Park-road. He forms the pump of an outer casing, with its two ends flat and parallel with one another. Through one end is passed a shaft or axis. On the inner face of the end of the casing this is surrounded by a disc, which lies in a recess in the end, so that the inner face of the disc and end are level with one another. Projecting from the disc is a crank pin which extends to the opposite end of the casing, and there passes through a disc which is concentric with the crank axis, and capable of revolving in an aperture in the end of the casing. On the outer side of this disc the crank pin has fixed upon it a crank arm carrying a stud or axis concentric with the crank shaft, and this is supported in a suitable fixed bearing. Within the casing the crank pin passes through the centre of a partition, the ends of which fit against the two ends of the casing.

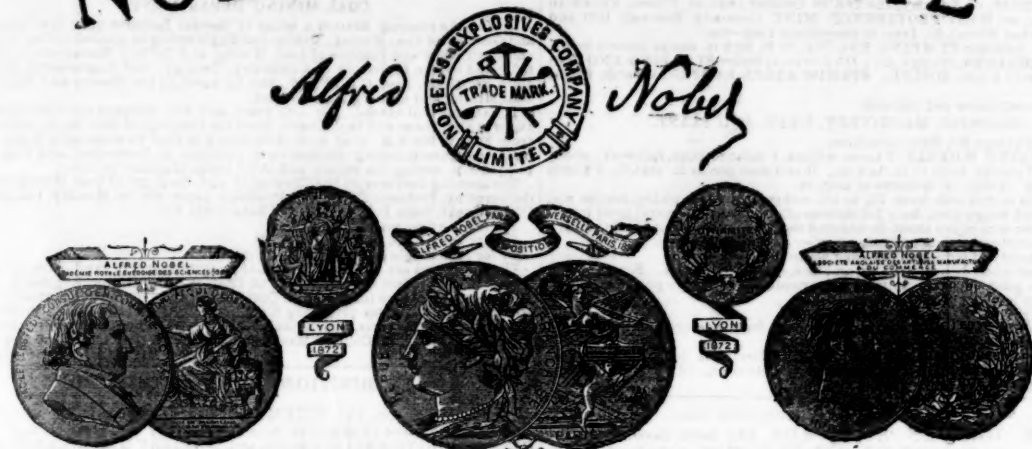
When the crank shaft or axis is revolved it carries the partition with it. The partition is not fixed to the crank pin, but is loose upon it, and its movements are so controlled that it makes a half revolution each time that the crank shaft makes a complete revolution. If the crank shaft is horizontal the partition starting, say, from a horizontal position below the shaft does not again assume a horizontal position until it again returns to the same horizontal position below the shaft. Two ports are led from the casing (inlet and outlet) it may be from below the partition when in this horizontal position and the casing and partition are so shaped that a portion of the casing between the ports then fits against the centre of the under side of the partition. The casing is also so shaped that as the crank shaft is revolved and the partition is carried round with it some portion of the sides or extremities of the partition is always in contact with some portion of the casing between the ports—and so that the opposite extremities of the partition are also always both in contact with the inner circumference of the casing.

One way in which the movement of the partition may be controlled so as to cause it to make half a revolution for each revolution of the crank axis is this:—The partition is formed with a short tubular neck surrounding the crank pin, where it passes through the circular disc before mentioned—outside the disc it has fixed upon and concentric with it a hollow wheel or disc. In the outer face of this wheel or disc are two grooves at right angles to one another, and one of them is in a line with the length of the partition. Fitting in each groove is a bar—each bar at its centre is carried by a pin—around which it can revolve—these pins are carried by an outer fixed casing. One pin is vertically below the central line of the crank shaft, and the other above it, and they are at the same distance as the crank pin from this central line—the bar carried by the lower pin is also made to slide in the groove, which is in a line with the length of the partition. As the partition and hollow disc or wheel at its end are carried round by the crank pin the disc or wheel slides to and fro along the bars, and in its movement also causes each bar to make one-half revolution for each revolution of the crank shaft, and so the partition also can only make one half revolution during the same time. The pin which the lower bar turns around may be a fixed pin, and an arm may be carried up from its end inside the interior of the hollow wheel or disc to carry a bearing for the short axis of the crank arm, which, as before mentioned, is at this end of the crank pin.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Sept. 14—	Minera	50	7 3 0	Panther Lead Co.
— ditto	—	50	7 3 0	ditto
— ditto	—	45	7 5 0	Runcorn Company.
— ditto	—	8	7 6 0	Walker, Parker, & Co.
—	Pierrefitte	120	12 4 0	Quirk, Barton, and Co.

BLENDE.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
Sept. 14—	Minera	50	4 11 0	Bagill Company.
— ditto	—	50	4 9 0	Dillwyn and Co.
— ditto	—	60	4 3 0	Villiers Spelter Co.
— ditto	—	52	4 3 0	ditto
— ditto	—	80	4 4 0	Virian and Sons.
— ditto	—	68	4 4 0	ditto
— ditto	—	85	3 18 6	Villiers Spelter Co.
— ditto	—	25	3 17 6	ditto
—	Pierrefitte	8	4 2 0	Virian and Sons.
—	Frongoch	100	3 4 0	John Lyaght.

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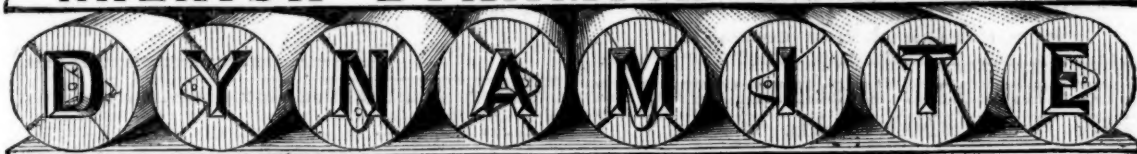
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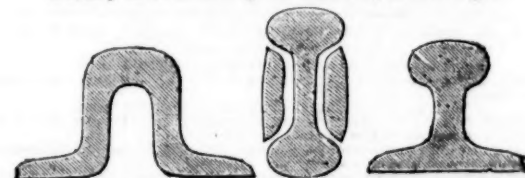
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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
3200 Blue Hills, t, c, St. Agnes	4 8 6	5 1/2	5 1/2	0 4 0	0 2 0	May 1881
6000 Carn Brea, t, c, Illogan	11 7 11	6 1/2	5 1/2	0 5 0	0 5 0	Nov. 1882
4000 Craignair, t, c, Illogan	5 0 0	3 1/2	2 1/2	0 0 0	0 0 0	Nov. 1882
12000 Devon Gr. Consols, t, c, Tavistock	1 0 0	3 1/2	2 1/2	0 0 0	0 0 0	Dec. 1883
4000 Dolcoath, t, c, Camborne	10 14 10	6 1/2	6 1/2	0 13 0	0 13 0	Apr. 1883
6000 East Pool, t, c, Illogan	0 9 9	4 1/2	3 1/2	0 37 1	0 18 0	Sept. 1883
12000 Great Holway, t, c, Illogan	5 0 0	5 1/2	5 1/2	0 12 0	0 7 0	July 1883
10000 Great Laxey, t, c, Illogan	4 0 0	16 1/2	15 1/2	0 29 13	0 5 0	July 1883
6000 Green Hurth, t, c, Illogan	0 6 0	6 1/2	6 1/2	0 4 0	0 5 0	May 1883
9830 Gunnislake (Cliffers), t, c	2 2 0	1 1/2	1 1/2	0 19 9	0 2 0	Mar. 1882
2800 Isle of Man, t, c, Illogan	25 0 0	1 1/2	1 1/2	0 8 5	0 1 0	Sept. 1880
6000 Killfret, t, c, Illogan	4 3 6	1 1/2	1 1/2	0 12 6	0 4 0	July 1883
6000 Leadhill, t, c, Illogan	6 0 0	2 1/2	2 1/2	0 1 2	0 4 0	June 1883
4000 Liburne, t, c, Illogan	18 15 0	1 1/2	1 1/2	0 815 0	0 10 0	June 1883
10000 Mellanor, t, c, Illogan	2 0 0	3 1/2	3 1/2	0 2 3	0 3 0	July 1883
9000 Minera Mining Co., t, c, Illogan	5 0 0	5 1/2	5 1/2	0 69 9	0 1 0	Aug. 1883
20000 Mining Co. of Ireland, t, c, Illogan	7 0 0	1 1/2	1 1/2	0 24 0	0 4 0	Jan. 1880
11829 North Hendre, t, c, Illogan	2 10 0	1 1/2	1 1/2	0 3 18	0 4 0	Nov. 1882
8146 Ditto	1 5 0	1 1/2	1 1/2	0 11 3	0 2 0	Nov. 1882
2000 North Levant, t, c, St. Just	13 6 0	2 1/2	1 1/2	0 3 7	0 2 0	Feb. 1881
4760 Penhall, t, c, St. Agnes	4 0 0	2 1/2	2 1/2	0 17 7	0 1 0	Apr. 1883
12000 Phoenix, t, c, Illogan	6 0 0	2 1/2	2 1/2	0 17 7	0 1 0	Apr. 1883
12000 Roman Gravel, t, c, Illogan	7 10 0	7 1/2	6 1/2	0 9 11	0 5 0	May 1883
50000 South Conduff, t, c, Illogan	1 0 0	1 1/2	1 1/2	0 1 1/2	0 1 1/2	Jan. 1883
6123 South Conduff, t, c, Illogan	7 5 7	8 1/2	8 1/2	0 5 6	0 8 0	Aug. 1883
9000 South Darwen, t, c, Illogan	1 10 0	7 1/2	7 1/2	0 4 0	0 2 0	Apr. 1880
6000 Tineroff, t, c, Pool, Illogan	12 10 0	7 1/2	7 1/2	0 51 3	0 5 0	Dec. 1881
5000 Van, t, c, Illogan	4 5 0	5 1/2	5 1/2	0 25 13	0 2 0	Jan. 1883
2000 West Holway, t, c, Illogan	1 0 0	1 1/2	1 1/2	0 1 0	0 1 0	Oct. 1881
6000 West Killy, t, c, Illogan	7 10 0	1 1/2	1 1/2	0 13 14	0 1 0	July 1883
12000 Wheel Crebor, t, c, Illogan	2 4 0	2 1/2	2 1/2	0 18 9	0 2 0	June 1883
1024 Wheel Eliza Consols, t, c, Austell	18 0 0	1 1/2	1 1/2	0 57 0	0 1 0	May 1883
6000 Wheel Grenville, t, c, Illogan	15 0 0	6 1/2	6 1/2	0 12 6	0 5 0	Sept. 1883
4295 Wheel Killy, t, c, Illogan	5 12 0	1 1/2	1 1/2	0 12 18	0 1 0	Jan. 1883
3000 Wheel Peavor, t, c, Illogan	10 1 0	3 1/2	3 1/2	0 8 13	0 6 0	Mar. 1883

FOREIGN DIVIDEND MINES.

35500 Alamillos, t, Spain	2 0 0	1 1/2	1 1/2	0 2 13	0 3 0	Sept. 1883
130000 Almada and Tinto Consol., t, Spain	1 0 0	3 1/2	3 1/2	0 1 0	0 3 0	May 1876
25000 Australian, t, c, Illogan	1 0 0	3 1/2	3 1/2	0 1 0	0 3 0	Aug. 1883
12000 Birkdale Creek, t, c, Illogan	4 0 0	1 1/2	1 1/2	0 1 0	0 3 0	Dec. 1883
30000 Bratsberg, t, c, Illogan	2 0 0	2 1/2	2 1/2	0 2 1/2	0 1 0	Sept. 1883
130000 Cape Copper Mining, t, c, Illogan	1 0 0	5 1/2	5 1/2	0 54 7	0 1 0	Sept. 1883
65000 Colorado United, t, c, Illogan	5 0 0	2 1/2	2 1/2	0 14 6	0 1 0	May 1883
60000 Copiapo, t, c, Illogan	3 10 0	3 1/2	3 1/2	0 2 11	0 3 0	Sept. 1883
70000 English & Australian, t, c, Illogan	2 10 0	1 1/2	1 1/2	0 3 2	0 2 0	Mar. 1883
2000 Eng. Aus. t, c, Illogan	1 0 0	3 1/2	3 1/2	0 8 10	0 3 0	Apr. 1882
85000 Fortuna, t, c, Illogan	0 12 0	3 1/2	3 1/2	0 8 10	0 3 0	Apr. 1882
72000 Frontino & Bolivia, t, c, Illogan	0 12 0	3 1/2	3 1/2	0 8 10	0 3 0	Apr. 1882
270000 Henrietta, t, c, Illogan	1 0 0	3 1/2	3 1/2	0 12 11	0 3 0	Oct. 1882
200000 La Plata, t, c, Illogan	2 0 0	3 1/2	3 1/2	0 19 7	0 4 0	Sept. 1883
5000 Linars, t, c, Illogan	3 0 0	3 1/2	3 1/2	0 10 0	0 10 0	June 1882
20000 Marbella Iron Ore, t, c, Illogan	10 0 0	15 1/2	15 1/2	0 2 10	0 15 0	May 1883
185184 Mason & Barry, t, c, Illogan	10 0 0	15 1/2	15 1/2	0 6 per cent.	0 0 0	1882
80659 Quebrada, t, c, Illogan	4 0 0	6 1/2	6 1/2	0 1 0	0 1 0	Sept. 1880
50000 Panulillo, t, c, Illogan	4 0 0	6 1/2	6 1/2	0 1 0	0 1 0	Sept. 1880
25000 Pitagui, t, c, Illogan	20 0 0	10 1/2	10 1/2	0 29 11	0 14 0	Dec. 1882
1400 Pontigui, t, c, Illogan	1 0 0	10 1/2	10 1/2	0 14 2	0 10 0	Feb. 1881
100000 Port Phillip, t, c, Illogan	1 0 0	10 1/2	10 1/2	0 14 2	0 10 0	July 1882
50000 Rara Fortuna, t, c, Illogan	1 0 0	10 1/2	10 1/2	0 14 2	0 10 0	July 1882
54000 Richmond Consol., t, c, Illogan	5 0 0	6 1/2	6 1/2	0 14 5	0 5 0	Aug. 1883
24532 Rio Pinto, t, c, Illogan	0 102 0	10 1/2	10 1/2	0 5 per cent.	0 0 0	July 1880
325000 Ditto, shares	10 0 0	21 1/2	20 1/2	0 2 18	0 16 0	May 1883
40000 Santa Barbara, t, c, Illogan	0 10 0	15 1/2	15 1/2	0 15 0	0 1 0	May 1882
120000 Scottish-Australian Mining Co., t, c, Illogan	0 10 0	15 1/2	15 1/2	0 15 per cent.	0 0 0	May 1883
80000 Sierra Butte, t, c, Illogan	2 0 0	13 1/2	13 1/2	0 2 5	0 1 0	Apr. 1883
40625 Ditto, Pumas Eureka	2 0 0	13 1/2	13 1/2	0 2 18	0 2 0	Apr. 1883
253000 St. John del Rey, t, c, Illogan	90 100 0	5 p.c. for half-year	0 0 0	0 0 0	0 0 0	June 1882
160000 Tanbakhery, t, c, Illogan	1 0 0	3 1/2	3 1/2	0 6 18	0 6 0	Aug. 1883
625000 Tharsis, t, c, Illogan	2 0 0	6 1/2	6 1/2	0 6 18	0 11 0	May 1883
20000 Tolima, t, c, Illogan	5 0 0	6 1/2	6 1/2	0 2 18	0 5 0	July 1883
25000 Victoria (London), t, c, Illogan	1 0 0	13 1/2	13 1/2	0 13 10	0 8 0	Feb. 1881
100000 Victoria (Nevada), t, c, Illogan	1 0 0	5 1/2	5 1/2	0 2 0	0 6 0	June 1882
5000 Western Andes, t, c, Illogan	1 0 0	5 1/2	5 1/2	0 4 3	0 5 0	Aug. 1883
2100 W. Prussian (5500 pref. sh.), t, c, Illogan	10 0 0	7 1/2	7 1/2	0 4 3	0 8 0	Aug. 1883
54100 Yorke Fen, t, c, Illogan	1 0 0	3 1/2	3 1/2	0 3 0	0 3 0	May 1882

Have made calls since last dividend was paid.

NON-DIVIDEND BRITISH MINES.

Shares.	Paid.	Last wk.	Clos. pr.
25000 Aberdun, t, c, Illogan	1 10 0	1 1/2	1 1/2
30000 Alston United, t, c, Illogan	1 0 0	1 1/2	1 1/2
12000 Anderton, t, c, Illogan	1 0 0	1 1/2	1 1/2
12000 Asheton, t, c, Illogan	1 0 0	1 1/2	1 1/2
12000 Bedford Unit, t, c, Illogan	0 14 0	1 1/2	1 1/2
12000 Brodick, t, c, Illogan	1 0 0	1 1/2	1 1/2
10000 Brada, t, c, Illogan	1 0 0	1 1/2	1 1/2
30000 British, t, c, Illogan	1 0 0	1 1/2	1 1/2
20000 British Manganese Company	1 0 0	1 1/2	1 1/2
30000 Beuno Consols, t, c, Illogan	1 0 0	1 1/2	1 1/2
20000 Bwch United, t, c, Illogan	1 0 0	1 1/2	1 1/2
12000 Collicombe Consols, t, c, Illogan	0 2 6	1 1/2	1 1/2
50000 Carn Camborne, t, c, Illogan	1 0 0	1 1/2	1 1/2
20000 Carnarvon, t, c, Illogan	1 0 0	1 1/2	1 1/2
37500 Carnarvon Consols, t, c, Illogan	2 0 0	1 1/2	1 1/2
6000 Cathedral, t, c, Illogan	1 3 8	1 1/2	1 1/2
20000 Central Foxdale, t, c, Illogan	1 17 6	1 1/2	1 1/2
25000 Coed-y-Fedw & Pant-y-Buarth, t, c, Illogan	1 0 0	1 1/2	1 1/2
24500 Cook's Kitchen, t, c, Illogan	30 14 9	25 1/2	25 1/2
10000 Cornwall Great Cons. (4500 issued)	1 0 0	1 1/2	1 1/2
30000 Creigiau, t, c, Illogan	0 17 0	1 1/2	1 1/2
8400 Crook Burn, t, c, Illogan	0 17 0	1 1/2	1 1/2
45000 D'Eresby Mount, t, c, Illogan	0 10 0	1 1/2	1 1/2
12000 Devon Consols, t, c, Illogan	1 0 0	1 1/2	1 1/2
60000 Devon Friendship, t, c, Illogan	1 5 0	1 1/2	1 1/2
12000 Devon Great United (21 shares)	1 5 0	1 1/2	1 1/2
50000 Drakeville, t, c, Illogan	0 15 0	1 1/2	1 1/2
12000 East Blue Hills, t, c, Illogan	0 5 0	1 1/2	1 1/2
6000 East Botallack, t, c, Illogan	1 0 0	1 1/2	1 1/2
6144 East Caradon, t, c, Illogan	4 19 0	1 1/2	1 1/2
4000 East Chiverton, t, c, Illogan	10 17 3	1 1/2	1 1/2
8000 East Craven Moor, t, c, Illogan	1 0 0	1 1/2	1 1/2
15000 East Devon Consols, t, c, Illogan	2 0 0	1 1/2	1 1/2
30000 East Herodsfoot, t, c, Illogan	1 0 0	1 1/2	1 1/2
20000 East Long Rake, t, c, Illogan	1 0 0	1 1/2	1 1/2
25500 East Roman Gravel, t, c, Illogan	1 0 0	1 1/2	1 1/2
100 East Trembo, t, c, Illogan	10 0 0	22 1/2	20 22 1/2
18000 East Van, t, c, Illogan	5 0 0	1 1/2	1 1/2
2048 East Wheel, t, c, Illogan	17 8 6	1 1/2	1 1/2
10000 East Wheel, t, c, Illogan	1 0 0	1 1/2	1 1/2
10000 East Wheel, t, c, Illogan	2 0 0	1 1/2	1 1/2
12000 East Wheel, t, c, Illogan	1 0 0	1 1/2	1 1/2
40000 Glasgow, t, c, Illogan	30 28 3	28 3	28 3
30000 Gobbett, t, c, Illogan	1 0 0	1 1/2	1 1/2
10000 Goddards, t, c, Illogan	1 0 0	1 1/2	1 1/2
32000 Goginan, t, c, Illogan	1 0 0	1 1/2	1 1/2
25000 Gorse, t, c, Illogan	1 0 0	1 1/2	1 1/2
850 Gorse and Merlyn Cons., t, c, Illogan	2 10 0	3 1/2	2 1/2
20000 Great Dylliff (10000 sh. issued)	1 0 0	1 1/2	1 1/2
6000 Great West Chiverton, t, c, Illogan	0 8 6	1 1/2	1 1/2
6000 Great Wheel, t, c, Illogan	1 0 0	1 1/2	1 1/2
6000 Grogwion, t, c, Illogan	1 0 0	1 1/2	1 1/2
10000 Gwyn-y-Mynydd, t, c, Illogan	4 0 0	1 1/2	1 1/2
70000 Gwydyr Amal, t, c, Illogan	1 0 0	1 1/2	1 1/2
8400 Harleins, t, c, Illogan	0 2 6	1 1/2	1 1/2
12000 Herodsfoot, t, c, Illogan	1 0 0	1 1/2	1 1/2
18000 Hingston Down, t, c, Illogan	0 13 0	1 1/2	1 1/2
20000 Kirkmichael, t, c, Illogan	1 0 0	1 1/2	1 1/2
25000 Kid Hill St. Cons., t, c, Illogan	1 2 8	1 1/2	1 1/2
15000 Lady Ann, t, c, Illogan	1 0 0	1 1/2	1 1/2
15000 Langford, t, c, Illogan	0 10 0	1 1/2	1 1/2
15000 Llandegla, t, c, Illogan	1 0 0	1 1/2	1 1/2
5120 Lovell, t, c, Illogan	0 16 0	1 1/2	1 1/2
9000 Marke Valley, t, c, Illogan	7 7 0	1 1/2	1 1/2
6000 Medlyn Moor, t, c, Illogan	3 15 10	1 1/2	1 1/2
8000 Mona, t, c, Illogan	5 0 0	2 1/2	2 1/2
20000 Monks Consols, t, c, Illogan	1 0 0	1 1/2	1 1/2
15000 Mostyn Consols, t, c, Illogan	2 0 0	1 1/2	1 1/2
20000 Mostyn Consols, t, c, Illogan	1 0 0	1 1/2	1 1/2
12000 Morfa Du, t, c, Illogan	1 0 0	1 1/2	1 1/2
12000 Mount Bay, t, c, Illogan	1 0 0	1 1/2	1 1/2
6144 Mount Carbis, t, c, Illogan	15 0 0	2 1/2	2 1/2
12000 New Caradon, t, c, Illogan	0 5 0	1 1/2	1 1/2
2400 New Cook's Kitchen, t, c, Illogan	9 13 6	4 1/2	3 4
8000 New Dolcoath, t, c, Illogan	3 0 0	1 1/2	1 1/2
10000 New Great Wheel, t, c, Illogan	0 10 0	1 1/2	1 1/2
10000 New Holm, t, c, Illogan	3 0 0	1 1/2	1 1/2
10000 New Killy, t, c, Illogan	1 0 0	1 1/2	1 1/2
15000 New Redoubt, t, c, Illogan	2 0 0	1 1/2	1 1/2
17500 New Terras, t, c, Illogan	2 0 0	1 1/2	1 1/2
3500 New Tincroft, t, c, Illogan	6 0 0	1 1/2	1 1/2
12000 New Trumpet, t, c, Illogan	1 0 0	1 1/2	1 1/2
8000 New Van Cons., t, c, Illogan	1 0 0	1 1/2	1 1/2
12000 New West Caradon, t, c, Illogan	0 4 6	1 1/2	1 1/2
3000 New Wheel, t, c, Illogan	0 10 0	1 1/2	1 1/2
3500 New Wheel, t, c, Illogan	0 10 0	1 1/2	1 1/2
12000 North Blue Hills, t, c, Illogan	1 0 0	1 1/2	1 1/2
5328 North Busy, t, c, Illogan	0 16 0	1 1/2	1 1/2
10000 N. D'Eresby Mount, t, c, Illogan	1 0 0	1 1/2	1 1/2
25000 North Goginan, t, c, Illogan	1 0 0	1 1/2	1 1/2

NON-DIVIDEND MINES—continued.

Shares.	Paid.	Last wk.	Clos. pr.
6400 North Green Hurth, t, c, Illogan	0 8 6	1 1/2	1 1/2
25000 North Grogwion, t, c, Illogan	0 8 6	1 1/2	